FAU27

# EMERGENCY LOCATOR TRANSMITTER (ELT, KANNAD)

PART NUMBER

**S1820502-01/-02/-04**
**S1821502-01/-02/-06**
**S1822502-01/-02**
**S1823502-01/-02/-03/-05**
**S1824502-01/-02**
**S1826502-02**

**FAU27**

COMPONENT MAINTENANCE MANUAL LEVEL 2
WITH
ILLUSTRATED PARTS LIST

Revision N°02
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**E-mail: support.sar@kannad.orolia.com**
**Tel.: +33 (0)2 97 02 49 00**

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# INTRODUCTION

TASK 25-63-05-990-801-A01

## 1. General

A. This component maintenance manual is compliant with ATA Specification iSpec2200 (AIR TRANSPORT ASSOCIATION OF AMERICA).

B. This manual gives the work instructions for the **maintenance level II** of the Emergency Locator Transmitters (ELT, KANNAD) PN S182X502-XX manufactured by KANNAD. (Address: KANNAD. Zone Industrielle des cinq Chemins 56520 GUIDEL-FRANCE or at www.kannad.com).

C. Maintenance level II of the Emergency Locator Transmitter (ELT, KANNAD) PN S182X502-XX consists in battery replacement only. The procedures must be done in workshops by FAR/ PART145 service stations with specific tools recommended by the manufacturer (Refer to PAGEBLOCK SPECIAL TOOLS, FIXTURES, EQUIPEMENT AND CONSUMABLES).

D. This manual does not include recommended technical maintenance intervals or details which change for the different shop equipment that is available.

E. If a task higher than level II must be performed, the procedures used by the manufacturer and described in CMM 25-63-01 must be applied. For regulatory requirements regarding maintenance periodicity, please consult your national aviation authority.

F. The dimensions are given in Metric Units (SI Units) with values in Imperial Units given in brackets, after or below the Metric Units values. In addition to the common symbols of Metric and Imperial Units, the abbreviations that follow are used in the manual:

- IPL = illustrated parts list
- Assy=assembly
- mfg=manufacturing
- P/N=part number
- OD=outer diameter
- ID=inner diameter

TASK 25-63-05-990-802-A01

## 2. Shop Check

A. The manufacturer did a check to make sure that the procedures given in the sections of the manual are satisfactory. For this, he did the maintenance procedures such as disassembly, assembly and testing.

TASK 25-63-05-990-803-A01

## 3. Revisions

A. With each revision written for the manual, full instructions are supplied. These refer to the related page numbers for insertion and deletion. A vertical line in the left margin shows the revised, added or removed material.

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# DESCRIPTION AND OPERATION

TASK 25-63-05-871-801-A01

## 1. DESCRIPTION

Refer to Figure 1 / 25-63-05-991-011-A01, Refer to Table 1 / 25-63-05-992-011-A01

A. General

(1) The Emergency Locator Transmitter (ELT) system generally includes:

(a) One Emergency Locator Transmitter (ELT) with:

1 One Auxiliary Antenna (*)

2 One Floating Collar (*)

3 One Water Switch Sensor (*) (***).

4 The Attaching Parts (*).

(b) One Mounting Bracket, P/N S1820511-XX, to attach the beacon to the aircraft (*) (**);

(c) One Programming DONGLE (*) (**) (***), P/N S1820514-XX;

(d) One Remote Control Panel (*) (**), P/N S1820513-XX;

(e) One CS144 Interface module (*) (**) (***) P/N S1825501-XX;

(f) One outside antenna (fixed versions only) (*) (**).

NOTE: - (*) in relation to the Variants,
- (**) not described in this manual,
- (***) option,
- For the Mounting Bracket: Refer to ACMMs ATA No 25-63-11 and 12 (level 3).
- For the Programming DONGLE: Refer to relevant documents (ACMMs level 3).
- For the Remote Control Panels: Refer to relevant documents (ACMMs level 3).
- For the CS144 interface module: Refer to ACMM ATA No 25-63-50 (level 3).
- For the Water Switch Sensor refer to ACMM ATA No 25-63-42 (level 3).

B. Purpose

(1) The KANNAD 406 and 121 beacons are aeronautical distress beacons that operate at civil and military frequencies of 121.5 MHz, 243 MHz and 406.025 MHz (the KANNAD 121 AF and AF-H at 121.5 MHz, 243 MHz only) as part of the COSPAS-SARSAT system.

(2) The KANNAD 406 and 121 beacons (other than the KANNAD 406 AS) transmit through an antenna attached to the aircraft fuselage. The KANNAD 406 AP versions (when removed from the mounting bracket) and KANNAD 406 AS and SURVIVAL have an auxiliary antenna that gives them full independence for use in survival conditions.

C. Variants

(1) ELTs detailed in this CMM are of types:

(a) Automatic Portable (AP);

- KANNAD 406 AP, 3-frequency ELT, is designed for fixed wings aircraft and helicopters;
- KANNAD 406 AP-H, 3-frequency ELT, is designed for helicopters only.

NOTE: Automatic Portable ELTs are intended to be rigidly attached to the aircraft before the crash but readily removable from the aircraft after the crash. They are automatically activated when a crash occurs and can be manually

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activated when removed from the aircraft. They can be tethered to a life raft.

(b) Automatic Fixed (AF);

- KANNAD 406 AF, 3-frequency ELT, is designed for fixed wings aircraft and helicopters;
- KANNAD 406 AF- H, 3-frequency ELT, is specifically designed for helicopters.
- KANNAD 121 AF, 2-frequency ELT, is designed for fixed wings aircraft and helicopters;
- KANNAD 121 AF- H, 2-frequency ELT, is specifically designed for helicopters.
- KANNAD 406 AF (6D), 3-frequency ELT, is designed for fixed wings aircraft and helicopters. They can be mounted in roll or pitch plane, either parallel or perpendicular to the aircraft flight direction.

NOTE: Automatic Fixed ELTs are intended to be permanently attached to the aircraft. They are automatically activated when a crash occurs.

(c) Survival (S)

- KANNAD 406 AS, 3-frequency ELT, is fitted with a floating collar and with an optional water switch sensor capability;
- KANNAD 406 AS TNC, 3-frequency ELT, is fitted with a floating collar and with an optional water switch sensor capability;
- KANNAD 406 SURVIVAL,3-frequency ELT, is fitted with a floating collar and a water switch sensor.

NOTE: Survival ELTs does not activate automatically and are intended to be removed from the aircraft. They can be tethered to a life raft or a survivor. Survival ELTs can be fitted with a water switch sensor for water activation.

Table 1 / 25-63-05-992-011 : ELT Variants

| VARIANT | NAME | PART NUMBER |
|---|---|---|
| A | KANNAD 406 AP | S1820502-01 |
| B | KANNAD 406 AP | S1820502-02 |
| C | KANNAD 406 AF | S1821502-01 |
| D | KANNAD 406 AF | S1821502-02 |
| E | KANNAD 406 AF-H | S1822502-01 |
| F | KANNAD 406 AF-H | S1822502-02 |
| G | KANNAD 406 AS | S1823502-01 |
| H | KANNAD 406 AS | S1823502-02 |
| J | KANNAD 406 AS-TNC | S1823502-03 |
| K | KANNAD 121 AF | S1824502-01 |
| L | KANNAD 121 AF | S1824502-02 |
| M | KANNAD 121 AF-H | S1826502-02 |
| N | KANNAD 406 AF (6D) | S1821502-06 |

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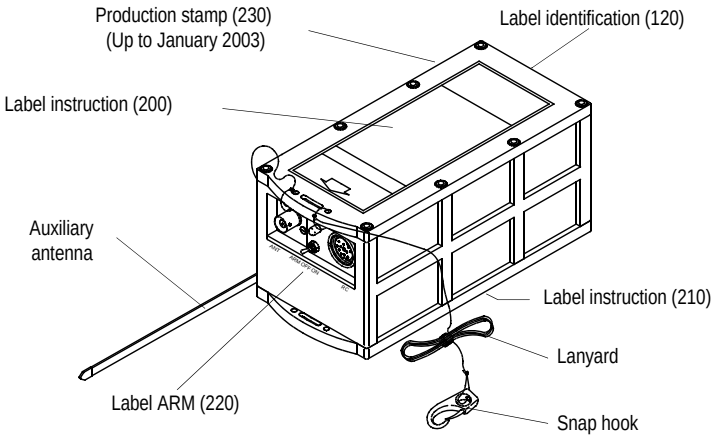
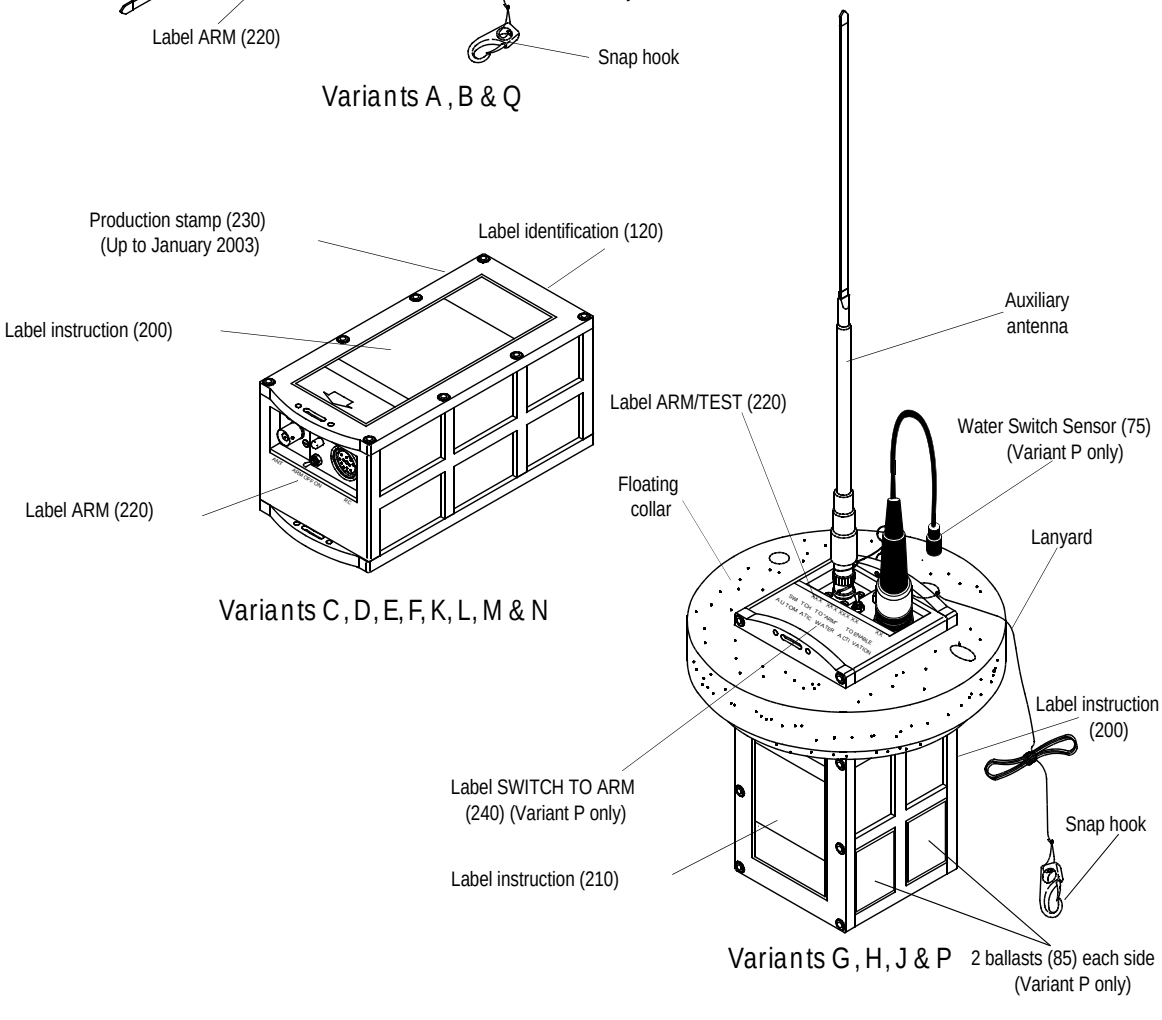
| VARIANT | NAME | PART NUMBER |
|---|---|---|
| P | KANNAD 406 SURVIVAL | S1823502-05 |
| Q | KANNAD 406 AP-H | S1820502-04 |

Figure 1 / 25-63-05-991-011-1
CONFIGURATION




Variants A , B & Q




Variants C , D, E, F, K, L, M & N

Variants G , H, J & P

256305-001101.cgm

(2) Obsolescence management of electronic PCB

NOTE: A new variant of electronic PCB fitted in KANNAD ELTs has been designed to manage the obsolescence of its components. This new version of electronic PCB is fitted in the following ELTs identified by the following index:

Table 2 / 25-63-05-992-011 : KANNAD ELTs FITTED WITH NEW PCB VERSION

| VARIANT | ELT NAME | PART NUMBER | INDEX of ELT when fitted with new PCB |
|---|---|---|---|
| B | KANNAD 406 AP | S1820502-02 | G or higher |
| D | KANNAD 406 AF | S1821502-02 | G or higher |
| F | KANNAD 406 AF-H | S1822502-02 | G or higher |
| H | KANNAD 406 AS | S1823502-02 | G or higher |
| J | KANNAD 406 AS-TNC | S1823502-03 | F or higher |
| L | KANNAD 121 AF | S1824502-02 | G or higher |
| M | KANNAD 121 AF-H | S1826502-02 | D or higher |
| N | KANNAD 406 AF (6D) | S1821502-06 | C or higher |
| P | KANNAD 406 SURVIVAL | S1823502-05 | B or higher |
| Q | KANNAD 406 AP-H | S1820502-04 | A or higher |

NOTE: ELTs mentioned in Table2 above are fitted with a new version of PCB.

ELTs which are not mentioned in Table2 above or with a lower index are fitted with an old version of PCB.

D. Characteristics

(1) Transmission 406 MHz (*)

- Frequency: 406.025 MHz ± 0.002 MHz
- Transmission power: 5 W (37 dBm ± 2 dB)
- Long-term stability: ±0.005 MHz over 5 years
- Modulation type: 16K0G1D (Bi-phase L encoding)
- Message length: 440 or 520 ms
- Repetition period: 47.5 to 52.5 s
- Transmission speed: 400 bps ± 1%
- Frame synchronization: 0 0010 1111 (0 1101 0000 during self-test)
- Power consumption: 1.3 to 1.7 A
- Transmission duration: 24 h at -20 degrees C

NOTE: (*) Not for variants K, L and M, Refer to Table 1 / 25-63-05-992-011-A01

(2) Transmission at 121.5/243 MHz

- Frequencies: 121.5 MHz ± 0.006 MHz and 243 MHz ± 0.012 MHz
- Transmission power: 100 to 400 mW (20 to 26 dBm) for each frequency
- Modulation factor: higher than 85%
- Modulation type: 3K20A3X

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- Decreasing scan modulation signal frequency: from 1420Hz to 490Hz
- Repetition frequency: 3 Hz
- Consumption:100 to 180 mA
- Transmission duration: more than 48 h at -20 degrees C (close to 100 hours with new batteries).

(3) Auxiliary antenna (**), Refer to Figure 1 / 25-63-05-991-011-A01

- Type: 1/2 wave UHF and 1/4 wave VHF
- Connector:

  BNC male or TNC male for variant J and P , Refer to Table 1 / 25-63-05-992-011-A01.

  (**) For variants A, B, G, H, J, P and Q , Refer to Table 1 / 25-63-05-992-011-A01

(4) Beacon Controls and Interface, Refer to Figure 3 / 25-63-05-991-013-A01

- Front panel:
  - "ANT" receptacle:

    BNC female or TNC female for variant J and P only, Refer to Table 1 / 25-63-05-992-011-A01.
  - Three-position switch: ARM/OFF/ON (except variant G, Refer to Table 1 / 25-63-05-992-011-A01) or TST/OFF/ON (for variant G, Refer to Table 1 / 25-63-05-992-011-A01).
  - Red LED: display of beacon status.
  - DIN 12 Receptacle: test, programming, remote control, Programming dongle, Water Switch Sensor, ELT-NAV Interface (CS144).
- On electronic board:
  - 1 G-SWITCH for variants A, B, C, D, E, F, K, L, M and Q (Refer to Table 1 / 25-63-05-992-011-A01).
  - 6 G-SWITCH sensors for variants N (Refer to Table 1 / 25-63-05-992-011-A01)
  - no G-SWITCH for variants G, H, J and P (Refer to Table 1 / 25-63-05-992-011-A01).
- Audible operating signal (buzzer, beeper).

(5) Battery

- Type: three $LiMnO_2$ cells, D type
- Life-time: 6 years (Expiry date written on the battery pack and on the ELT label).

(6) Physical Characteristics

- Dimensions: Refer to Figure 2 / 25-63-05-991-012-A01
- Weight (without bracket and with auxiliary antenna, float and water switch sensor, in relation to the version):
  - Variants A, B and Q: less than 1.130 kg (2.49 lb.)
  - Variants C and D: less than 1kg (2.2 lb.)
  - Variants E and F: less than 1kg (2.2 lb.)
  - Variants G, H and J: less than 0.980 kg (2.16 lb.)
  - Variants K, L and M: less than 1kg (2.2 lb.)
  - Variant N: less than 1.1 kg (2.42 lb.)
  - Variant P: less than 1.110 kg (2.45 lb.)

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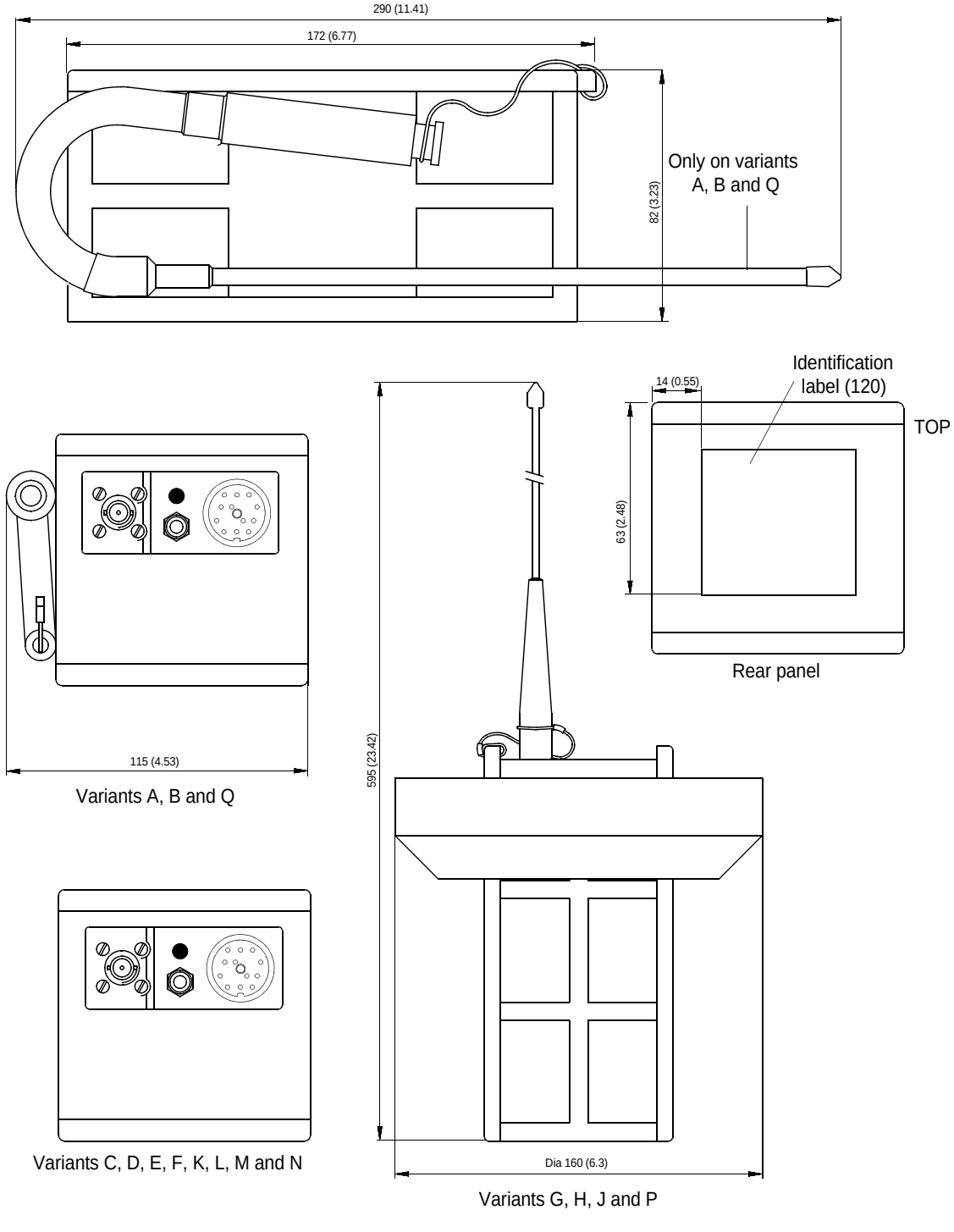
Figure 2 / 25-63-05-991-012-1
DIMENSIONS



E. Detailed Description

(1) General (Refer to Figure 1 / 25-63-05-991-011-A01)

(a) The principal elements of the ELT (in relation to the version) are:

- A molded yellow plastic rectangular box
- An auxiliary antenna (for variants A, B, G, H, J, P and Q, Refer to Table 1 / 25-63-05-992-011-A01), attached to the beacon by a thread of nylon
- A floating collar (for variants G, H, J and P, Refer to Table 1 / 25-63-05-992-011-A01) made of polyethylene foam
- A polyester lanyard attached to the beacon by a square knot with a snap hook at the other end (for variants A, B, G, H, J, P and Q, Refer to Table 1 / 25-63-05-992-011-A01.
- A water switch sensor (75) for variant P only, Refer to Table 1 / 25-63-05-992-011-A01.

(2) Housing

(a) External description, Refer to Figure 3 / 25-63-05-991-013-A01:

- The housing has two covers, the upper and the lower cover, each screwed by eight screws. The inner face has a peripheral groove with an O-ring and a cut-out at the front end.
- The housing has these items on the sides:
  - Front panel:
    - One BNC 50 Ohm connector (or TNC 50 Ohm connector for variant J and P only, Refer to Table 1 / 25-63-05-992-011-A01) for connection of an outside or auxiliary antenna (ANT receptacle).
    - One 3-position switch
    - One red LED
    - One DIN 12-pin connector
    - A label (220) (Refer to Figure 5 / 25-63-05-991-015-A01) showing the position of switch: “ARM/OFF/ON” for variants A, B, C, D, E, F, K, H, J, L, M, N, P, and Q (Refer to Table 1 / 25-63-05-992-011-A01) or “TST/OFF/ON” for variant G (Refer to Table 1 / 25-63-05-992-011-A01)
    - A label (240) warning the user to switch to «ARM» to enable activation by water switch sensor for variant P only (Refer to Table 1 / 25-63-05-992-011-A01)
  - Rear panel with an identification label (120) (Refer to Figure 5 / 25-63-05-991-015-A01).
  - Upper cover with an instruction label (200) in English language (Refer to Figure 5 / 25-63-05-991-015-A01).
  - Lower cover with an instruction label (210) in a language other than English (Refer to Figure 5 / 25-63-05-991-015-A01) for variants A, B, G, H, J, P and Q only (Refer to Table 1 / 25-63-05-992-011-A01).
  - Sides:
    - Reinforced by ribs containing self-tapping screws to attach the covers.
    - A production stamp (230), Refer to Figure 6 / 25-63-05-991-016-A01, is stuck onto the upper right side of versions up to January 2003.
    - Four ballasts (85) are stuck on the lower part of the left and right sides (for variant P only, Refer to Table 1 / 25-63-05-992-011-A01).

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(b) Internal Description (Refer to Figure 4 / 25-63-05-991-014-A01):

1 The housing is divided into two compartments (upper and lower) by a strong molded partition. A hole drilled in this partition is used as cable run for the electronic board supply wires.

The upper compartment contains the back face of the front panel components and their wiring. The assembly has a coating of silicone elastomer adhesive. It also includes an electronic board (A1) fixed to the partition with six screws. For variant N only (Refer to Table 1 / 25-63-05-992-011-A01), an additional electronic board (A2) is inserted vertically into the sliding rail of the upper compartment. This electronic board (A2) is fitted with 4 additional G-Switch sensors (2 in the horizontal plan, 2 parallel to the vertical axis). The electronic board (A1) is also fitted with the following electronic components:

A MCX receptacle plugged on a MCX connector fitted with a coaxial cable. The coaxial cable is wired to the BNC 50 Ohm receptacle (or TNC 50 Ohm receptacle for variant J and P only, Refer to Table 1 / 25-63-05-992-011-A01) of the front panel.

- A sixteen-pin HE10 receptacle to connect switch, LED and twelve-pin connector on the front panel.
- Two electric wires (red and black) to plug the battery (not visible).

2 The lower compartment contains the battery (BT1) installed between two foam wedges. The back foam wedge is split in half: in variants G, H, J and P, the lower part of this half foam wedge is replaced by a lead ballast in order to improve stability in water. The front foam has a hole to contain a desiccant capsule. The battery assembly includes three lithium batteries connected in series and held together by a heat shrink sleeve. The battery is fitted with two wires (red and black) with a connector.

3 The battery (BT1) has a label that shows these indications:

- Part number
- Batch number
- Amendment
- Inspection identification
- Date of manufacture
- Expiry date.

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Figure 3 / 25-63-05-991-013-1
EXTERNAL DESCRIPTION

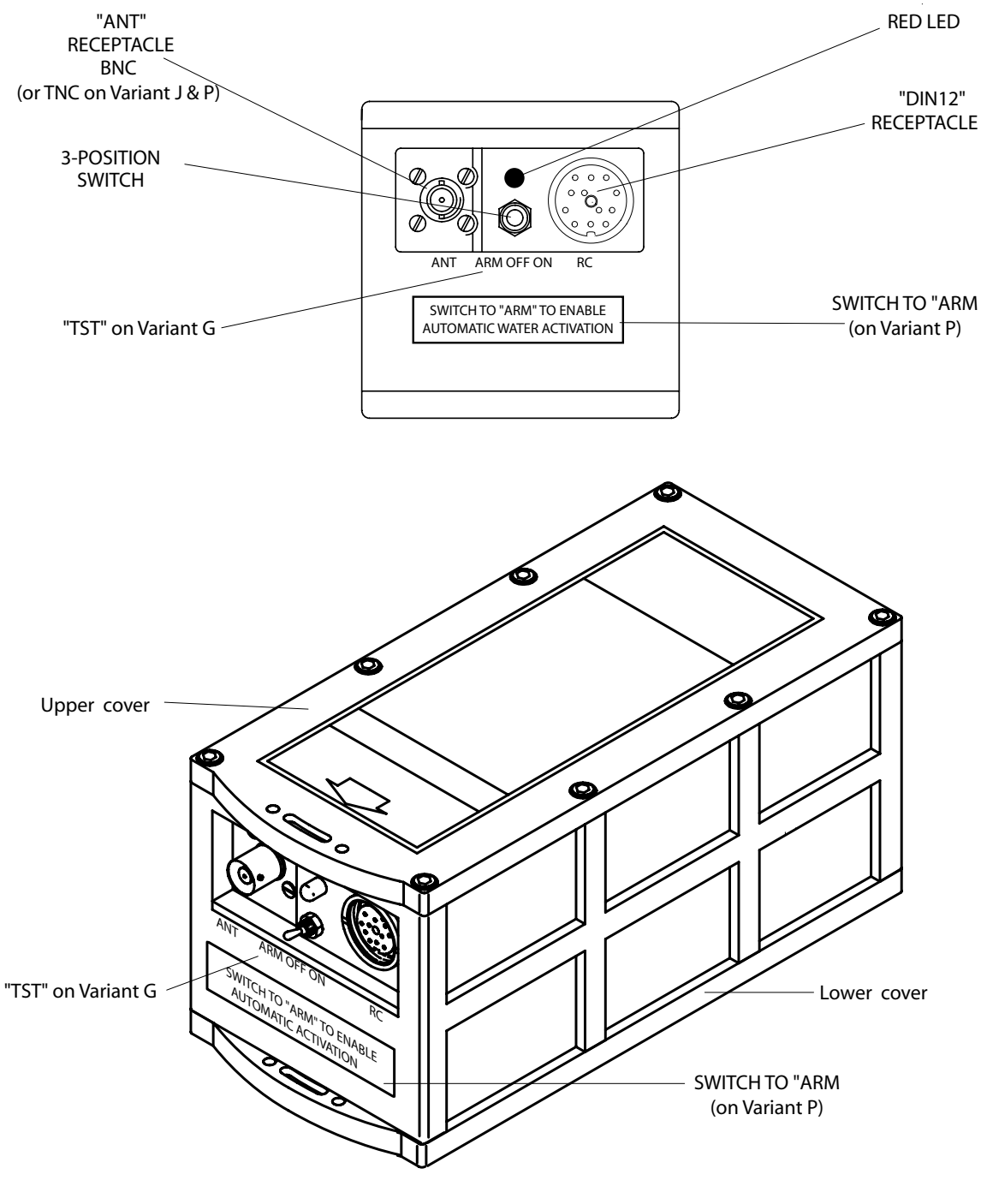


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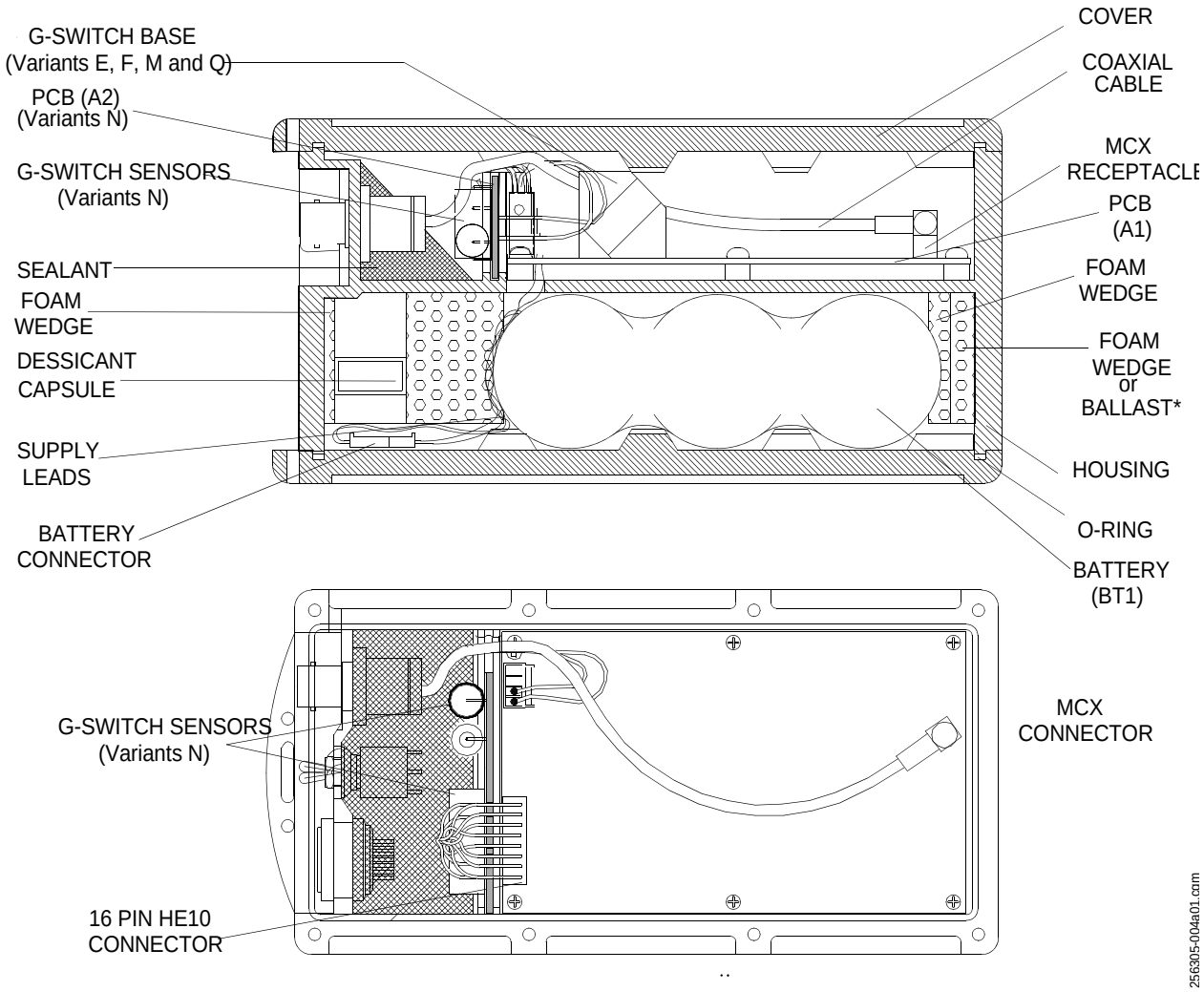
Figure 4 / 25-63-05-991-014-1
INTERNAL DESCRIPTION



F. Labelling

(1) External identification (Refer to Figure 5 / 25-63-05-991-015-A01)

(a) An ARM or TST label (220) is stuck onto the front face, below the 3-position switch:

ARM/OFF/ON for variants A, B, C, D, E, F, H, J, K, L, M, N, P, and Q, Refer to Table 1 / 25-63-05-992-011-A01,

TST/OFF/ON for variants G, Refer to Table 1 / 25-63-05-992-011-A01.

(b) A SWITCH TO ARM label (240) for variant P, Refer to Table 1 / 25-63-05-992-011-A01, is stuck on the front panel below the ARM label (220). This label is used to warn the user to switch to ARM to enable activation by water switch sensor.

(c) An instruction label (200) is stuck onto the top cover, this label shows the following information:

1 Direction of flight (arrow) (except for variants G, H, J and P , Refer to Table 1 / 25-63-05-992-011-A01);

2 Beacon instructions use;

3 Beacon part number and amendment;

4 Beacon serial number;

5 From January 2003, a production stamp (230) is stuck onto the bottom of this label to replace the beacon part number, amendment and serial number.

(d) An instruction label (210) in a language other than English for variants A, B, G, H, J, P, and Q only , Refer to Table 1 / 25-63-05-992-011-A01 is stuck onto the bottom cover, this label shows the following information:

1 Beacons instructions use (in a language other than English);

2 Beacon part number and amendment;

3 Beacon serial number.

(e) An identification label (120) is stuck onto the rear panel, this label shows the following information:

1 Date on which the beacon was put into service or date of inspection;

2 Date of the next inspection (as required by the relevant Civil Aviation Authorities);

3 Battery type (P/N written on the battery pack);

4 Expiry date (Battery expiry date written on the battery pack);

5 Identification protocol;

6 Identification number;

7 Beacon identification hexadecimal code (also named «15HEXID»);

8 Aircraft identification number (Tail Number);

9 COSPAS-SARSAT number (CSN) between 300000 and 389999;

10 MSN.

NOTE: This label has to be replaced for each battery replacement, Refer to SUBTASK 25-63-05-430-001-A01.

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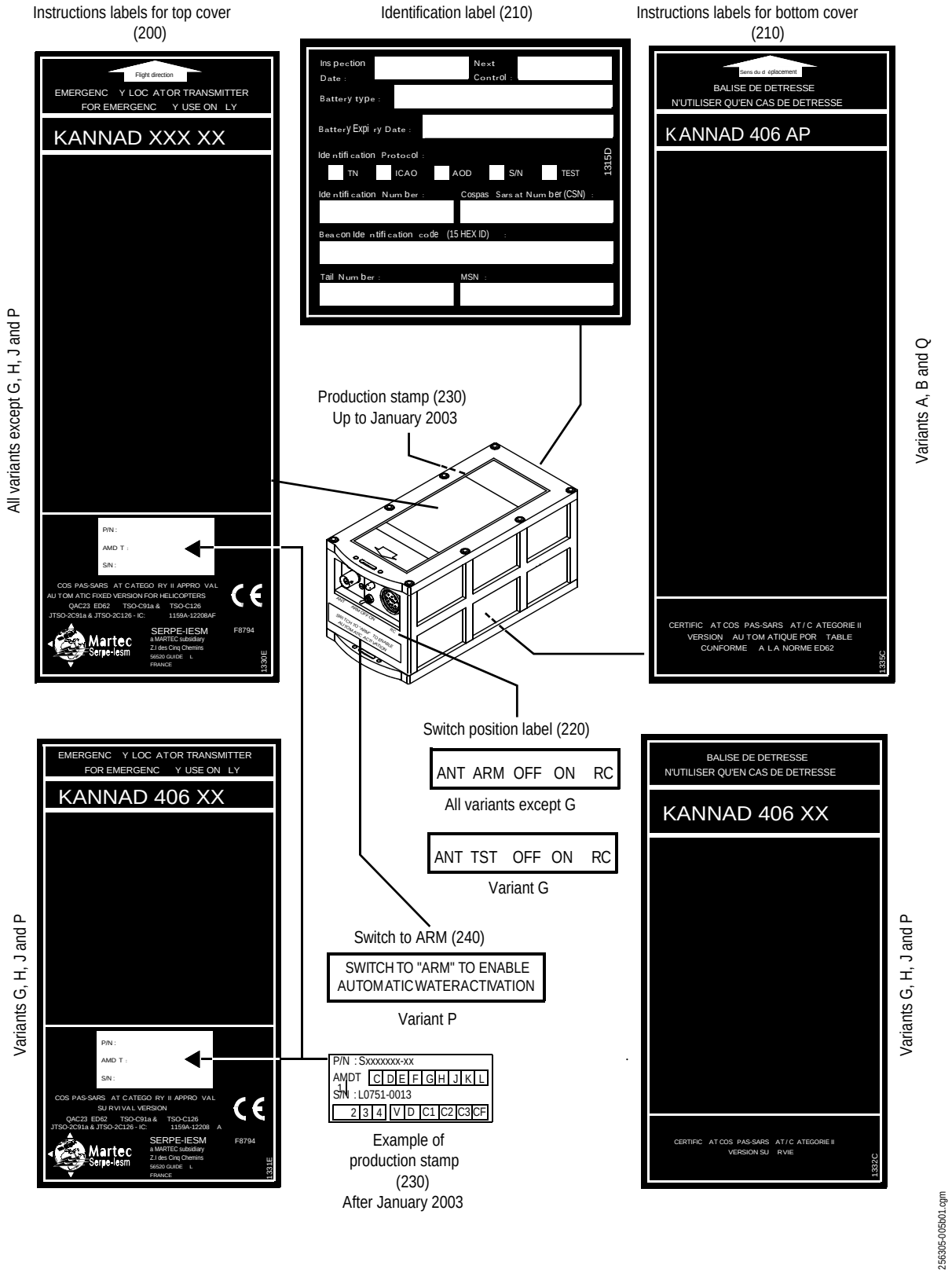
Figure 5 / 25-63-05-991-015-1
IDENTIFICATION

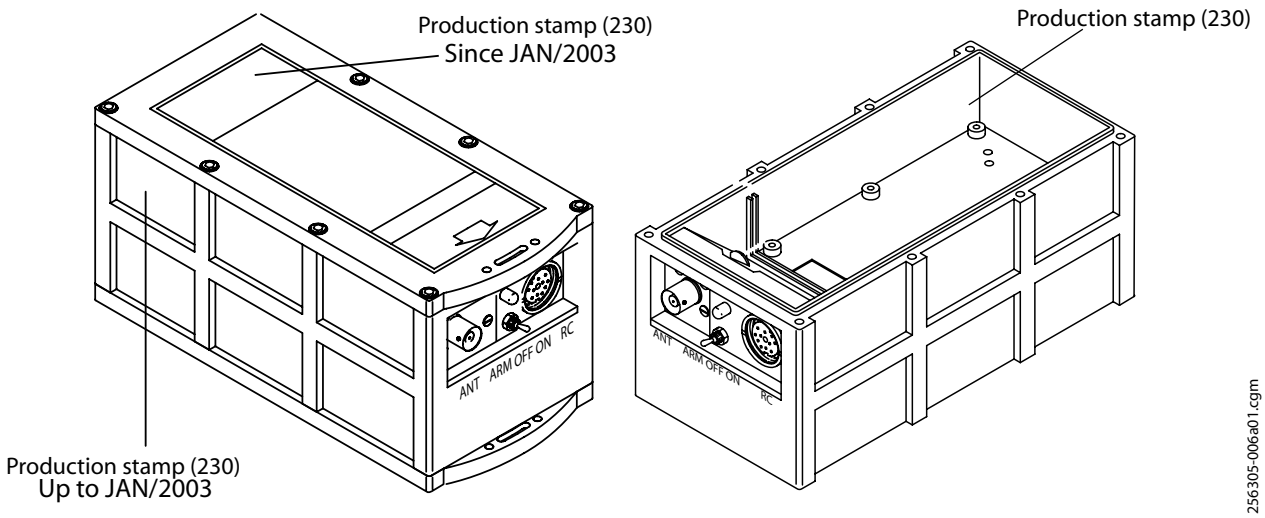


(2) Production stamps, Refer to Figure 6 / 25-63-05-991-016-A01

NOTE: In order to manage the equipment manufactured or sold, our configuration management requires the use of production stamps. Accordingly, all assemblies and sub-assemblies of KANNAD ELTs are identified by a production stamp (230). This marking enables to determine the status of the equipment and some of its sub-assemblies. It mainly gives information on:

- P/N, Part Number;
- AMDT, amendment;
- S/N, Serial Number;
- Manufacturer control status: V = Visual inspection, D = Burn-it, C1 = First functional control, C2 = Second functional control, C3 = Third functional control, CF = Final Control.

Figure 6 / 25-63-05-991-016-1
PRODUCTION STAMPS LABELS



## 2. OPERATION

Refer to Figure 3 / 25-63-05-991-013-A01

A. Functions

(1) General

(a) The ELT has four different modes:

- Off
- Self-test (temporary mode)
- Armed (standby mode to permit automatic activation by the shock sensor, the remote control panel or the water switch sensor on variant P (optional water switch sensor on variants G, H and J).
- On (Transmission).

NOTE: Transmission operates if the beacon is activated (“ON” switch on the ELT control panel, “ON” switch on the remote control panel with ELT on ARM or automatic activation).

(2) Modes

(a) Off

1 The ELT is off when the switch is in the “OFF” position. No part of the ELT is energized.

2 This mode must be selected when the ELT is removed from the aircraft.

(b) Self-test

1 The self-test mode is a temporary mode (max duration 5 sec): this mode checks the main characteristics of the transmitter (Battery voltage, transmission power, VCO locking, Programming) then permits digital communication with a programming and testing equipment. Self-test sequence consists in a short no modulated 121.5 / 243 MHz and particular 406.025 MHz transmission (burst 100 msec.). 406.025 MHz self-test transmission is coded with the inverted frame requested by COSPAS-SARSAT technical specification.

2 This mode is selected:

- When the switch is set from “OFF” to “ARM” for variants A, B, C, D, E, F, H, J, K, L, M, N, P, and Q (Refer to Table 1 / 25-63-05-992-011-A01);
- When the switch is set from “OFF” to “TST” for variant G, (Refer to Table 1 / 25-63-05-992-011-A01);
- When the switch is set to “ON” before transmission.

3 The buzzer operates during the self-test procedure. After approximately 3 seconds, the test result is displayed on the LED as follows:

- One long flash indicates a good test
- A series of short flashes indicates a bad test.

(c) Armed

1 To permit activation, the ELT must be in standby mode with the switch in the “ARM” position.

NOTE: Not applicable to variant G, Refer to Table 1 / 25-63-05-992-011-A01 Variant H, J and P, Refer to Table 1 / 25-63-05-992-011-A01, having no switch, automatic activation is possible using a water switch sensor (refer to relevant documentation).

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(d) On

1 This mode is selected:

- Manually when the switch is set to the “ON” position
- When the Remote Control Panel switch (on the aircraft) is set to the “ON” position (provided that the ELT switch is in the “ARM” position)
- When a shock occurs (provided that the ELT switch is in position “ARM” for variants A, B, C, D, E, F, K, L, M, N and Q) (Refer to Table 1 / 25-63-05-992-011-A01)
- When the water switch sensor is submerged in salt water for variant H, J (option) and P (Refer to Table 1 / 25-63-05-992-011-A01).

2 When this mode is selected, the ELT starts transmission:

- On 121.5 MHz and 243 MHz immediately (continuous transmission, except during 406.025 MHz for variants A, B, C, D, E, F, G, H, J, N, P and Q, Refer to Table 1 / 25-63-05-992-011-A01)
- On 406.025 MHz after 50 seconds (406 MHz burst at intervals of 50 seconds for 24 hours) (not for variants K, L and M, Refer to Table 1 / 25-63-05-992-011-A01)
- On 121.5 MHz and 243 MHz at intervals of 60 seconds with aircraft identification in Morse Code (for variants K, L and M, Refer to Table 1 / 25-63-05-992-011-A01 only, if programmed).

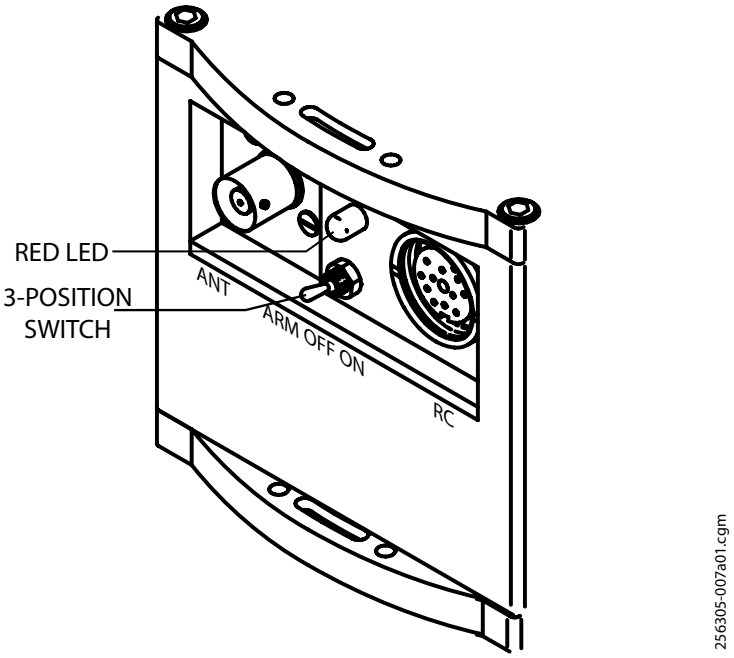
3 The red LED on the ELT and the buzzer operate.

4 In case of accidental activation, the ELT can be reset (set the switch to “OFF”).

NOTE: If activation greatest than 50 seconds, inform ATC (Air Traffic Control).

5 The number of 406 MHz bursts transmitted is recorded. This information is available when the ELT is connected to a programming equipment.

Figure 7 / 25-63-05-991-017-1
COMMANDS AND CONTROLS



B. Transmission

(1) The ELTs are designed to transmit on three frequencies (121.5, 243 and 406.025 MHz), but not variants K, L and M (Refer to Table 1 / 25-63-05-992-011-A01) which transmit only on two frequencies (121.5 and 243 MHz).

(2) The two basic aeronautical emergency frequencies (121.5 and 243 MHz) are principally used for homing in the final stages of the rescue operations.

(3) After activation, the transmitter operates continuously on 121.5 and 243.0 MHz with an output power of 100 mW on each frequency. The modulation is an audio frequency with a downward sweep from 1420 Hz to 490 Hz with a repetition rate of 3 Hz. The AM modulation factor is more than 85%.

NOTE: For ELT variants K, L and M (Refer to Table 1 / 25-63-05-992-011-A01), if programmed, transmission of the aircraft identification (tail number) in Morse Code on 121.5 and 243 MHz every 60 seconds.

(4) During the first 24 hours of operation, a digital message is transmitted on 406.025 MHz at intervals of 50 seconds. The output power on 406.025 MHz is approximately 5W.

NOTE: The 406.025 MHz frequency is used by the COSPAS-SARSAT satellites for precise pinpointing and identification.

(5) The message transmitted by the ELT on 406.025 MHz is a 112-bit identification message or a 144 bit message when connected to a CS144 interface module.

(6) Biphase L modulation at 400 BPS makes possible to transmit all the related identification information to the COSPAS-SARSAT satellites in 440 ms (resp 512 ms with 144 bit message).

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# TESTING AND FAULT ISOLATION

TASK 25-63-05-700-801-A01

## 1. TESTING

A. Test Equipment

- 50 ohms load (BNC or TNC plug, Refer to PAGEBLOCK DESCRIPTION AND OPERATION), BT100AVTRIPLE, Test mock-up for current measurement (Refer to Figure 1001 / 25-63-05-991-101-A01), Multimeter (microammeter).
- DC Power supply 9V 3 A.

B. Special Precautions and Environmental Conditions

- Temperature: between 15 degrees Celsius and 35 degrees Celsius.

C. ELT Variants

- The Emergency Locator Transmitter (ELT) is included in the KANNAD beacon configuration.
- ELT variants: Refer to Table 1 / 25-63-05-992-011-A01

D. Beacon Self-test

CAUTION: THE SELF-TEST MUST ONLY BE PERFORMED WITH AN ANTENNA OR A 50 OHMS LOAD CONNECTED TO THE «ANT» RECEPTACLE. NON RESPECTING THIS INSTRUCTION CAN DAMAGE THE POWER STAGE AMPLIFIER.

CAUTION: SELF-TEST SHOULD NOT BE DONE MORE THAN ONCE A WEEK. SHOULD SELF-TESTS BE CARRIED OUT MORE THAN THE MAXIMUM ALLOWED, THE BATTERY LIFE-TIME MIGHT BE AFFECTED.

NOTE: The beacon self-test is a temporary mode (with a duration of 5 seconds). It is active when the switch is moved from the “OFF” position to “ARM”, (“TST” for variant G, Refer to Table 1 / 25-63-05-992-011-A01) or “ON”.

- Connect a 50 Ohm load to the “ANT” receptacle on the front panel of the beacon.
- Set the beacon switch to ARM or TST (for variant G, Refer to Table 1 / 25-63-05-992-011-A01): the buzzer will operate.
- After approximately 3 seconds, the red LED on the front panel shows the result of the self-test:
  - A long flash indicates that the beacon is operating correctly,
  - 3 + n short flashes indicates an operating failure (Refer to Table 1002 / 25-63-05-992-102-A01). The number «n» of flashes gives an indication of the faulty parameter detected.

Table 1001 / 25-63-05-992-101 : Operating Failure

| NO OF FLASHES | SIGNIFICANCE | Applicability |
|---|---|---|
| 3 + 1 | Low battery voltage | All variants |
| 3 + 2 | Low transmission power | All variants |
| 3 + 3 | Faulty VCO locking | Not for variants K, L & M Refer to Table 1 / 25-63-05-992-011-A01 |
| 3 + 4(*) | No ID number | Not for variants K, L & M Refer to Table 1 / 25-63-05-992-011-A01 |

NOTE: (*) This result is normal if the beacon is supplied with maintenance DONGLE or

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unprogrammed.

- Record the test result, then set the Switch to “OFF” (Refer to TASK 25-63-05-700-802-A01 indicating the necessary procedure in relation to the failure symptoms).

E. Current measurement after battery replacement

(1) Purpose

This test must be carried out (before closing of lower cover) after each battery replacement to measure the current in transmission and stand by mode.

(2) Procedure

(a) Set up the test model for current measurement (Refer to Figure 1001 / 25-63-05-991-101-A01).

NOTE: Connectors and pins used to make the test model are included in KIT, BAT300 P/N S1820516-99 [Items 161 to 164 of IPL, Refer to (TASK 25-63-05-970-801-A01))]. Wires are not included, AWG18 gauge with a maximum length of 20 cm (7.87 in.) should be preferred.

(b) Connect a ammeter with a range more than 2A to pins A1 and A2 of the test model.

(c) If available select the «MAX HOLD» function.

(d) Set the ELT to «ARM» position.

- the ELT perform a self-test

(e) Measure the maximum current during the self-test procedure (duration approx. 500 ms during 406.025 MHz transmission)

NOTE: Current maximum value must be 1.7A for old versions of PCBs or 2.2 A for new versions of PCB (Refer to Table 2 / 25-63-05-992-011-A01, Page block DESCRIPTION AND OPERATION to check if your ELT is fitted with an old or new version of PCB).

- If not send the beacon to PART/FAR145 maintenance station approved to perform maintenance level 3 with CMM 25-63-01.

(f) Connect S1 to S2 (put a jumper)

(g) Replace the ammeter by a micro-ammeter (range 100 microA).

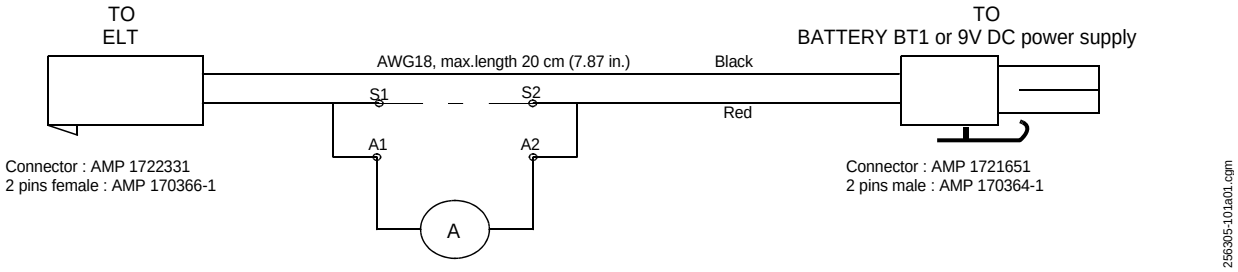
(h) Disconnect S1 from S2 (remove the jumper).

(i) Measure the current.

- It must be less than 50 microA.
- If not send the beacon to a PART/FAR145 maintenance station accredited to perform maintenance level 3 with CMM 25-63-01.

Figure 1001 / 25-63-05-991-101-01
TEST MODEL FOR CURRENT MEASUREMENT

Caution: Take care not to damage the pins with the soldering



F. Beacon Operating tests

(1) Operating Test on G-Switch (Not for Variants G, H, J &P)

- With the 50 Ohm load still plugged, set the beacon switch from «OFF» to «ARM».
- For variants A, B, C, D, E, F, K, L, M, N and Q, cause abrupt move of the beacon towards the front.

  Note: For variants E, F, M and Q the beacon must have a 45-degree upward tilt.
- Make sure that the beacon operates (audible buzzer).
- Switch the beacon to “OFF”.
- For variants N only, perform again the procedure described above for each of the five other directions (downwards, upwards, towards the rear, the left and the right).
- Disconnect the 50 Ohm load.

  Do not operate for more than 50 seconds.

(2) Frequency and Power Check

- Connect the BNC connector of the ELT front panel to the BT100AVTRIPLE or any equivalent COSPAS-SARSAT decoder.
  CAUTION: SOME DECODERS MAY REQUIRE THE USE OF AN ATTENUATOR (RISK OF DAMAGE OF THE TEST SET), REFER TO THE APPLICABLE OPERATION MANUAL INCLUDED WITH THE CONNECTOR.
- Perform a self-test.
- Measure these frequencies and power values:
  - Transmission at 121.5 MHz:
    - Frequency: 121.5 MHz ± 0.006 MHz and 243 MHz ± 0.012 MHz.
    - Power: 100 to 400 mW (20 to 26 dBm).
  - Transmission at 406.025 MHz (one transmission at intervals of 50 seconds)
    - Frequency: 406.025 MHz ± 0.002MHz.
    - Power: 5 W (37dBm ± 2 dB).

(3) Modulation Factor Check at 121.5 MHz

- Switch the beacon to «ON».

  Do not operate for more than 50 seconds.
- Make sure that the modulation factor is higher than 85%.
- Switch the beacon to «OFF».

(4) Check of Transmission Coding at 406.025MHz

- Perform a self-test.
- Do a check of the code displayed by the COSPAS SARSAT decoder. It must be the full COSPAS-SARSAT message. It must be, except for the 5th and the 6th digits, identical to the programmed message.

  NOTE: The message transmitted during self-test sequence always begins with FF FE D0 whereas a programmed message begins with FF FE 2F.

  Example of message programmed in ELT:

  FF FE 2F 53 C3 24 97 38 0B A6 0F D0 F5 20.

  Example of same message decoded by Cospas-Sarsat Decoder:

  FF FE D0 53 C3 24 97 38 0B A6 0F D0 F5 20.
- Disconnect the COSPAS-SARSAT decoder.

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TASK 25-63-05-700-802-A01

## 2. FAULT ISOLATION

### A. Fault on Self-Test

Table 1002 / 25-63-05-992-102 : Self-test Result 3+1

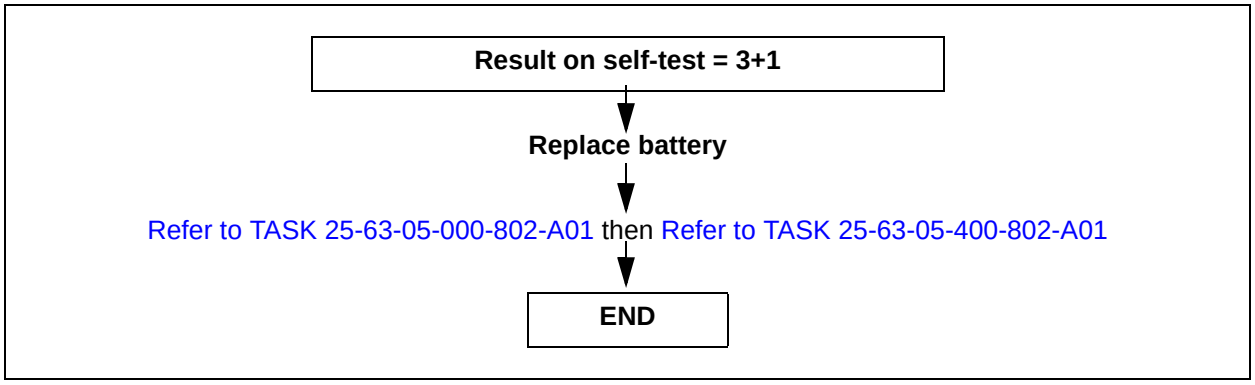


Table 1003 / 25-63-05-992-103 : Self-test Result 3+2

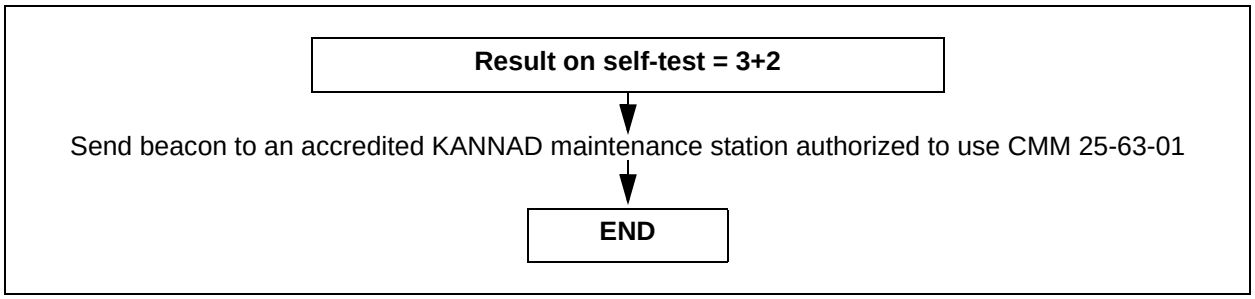


Table 1004 / 25-63-05-992-104 : Self-test Result 3+3

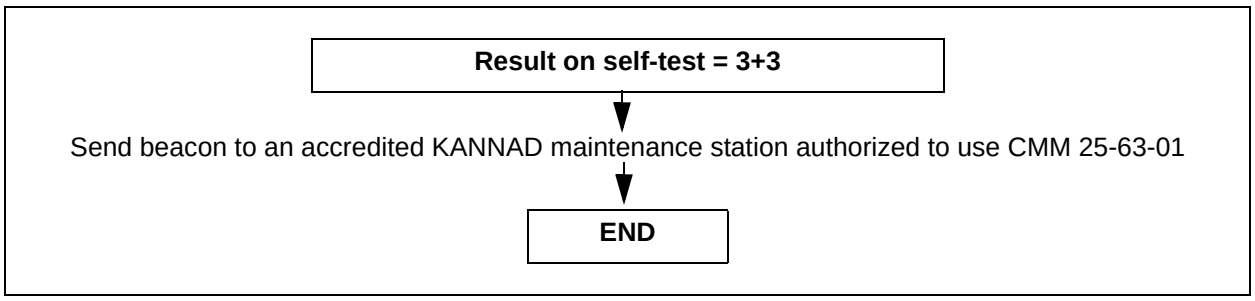


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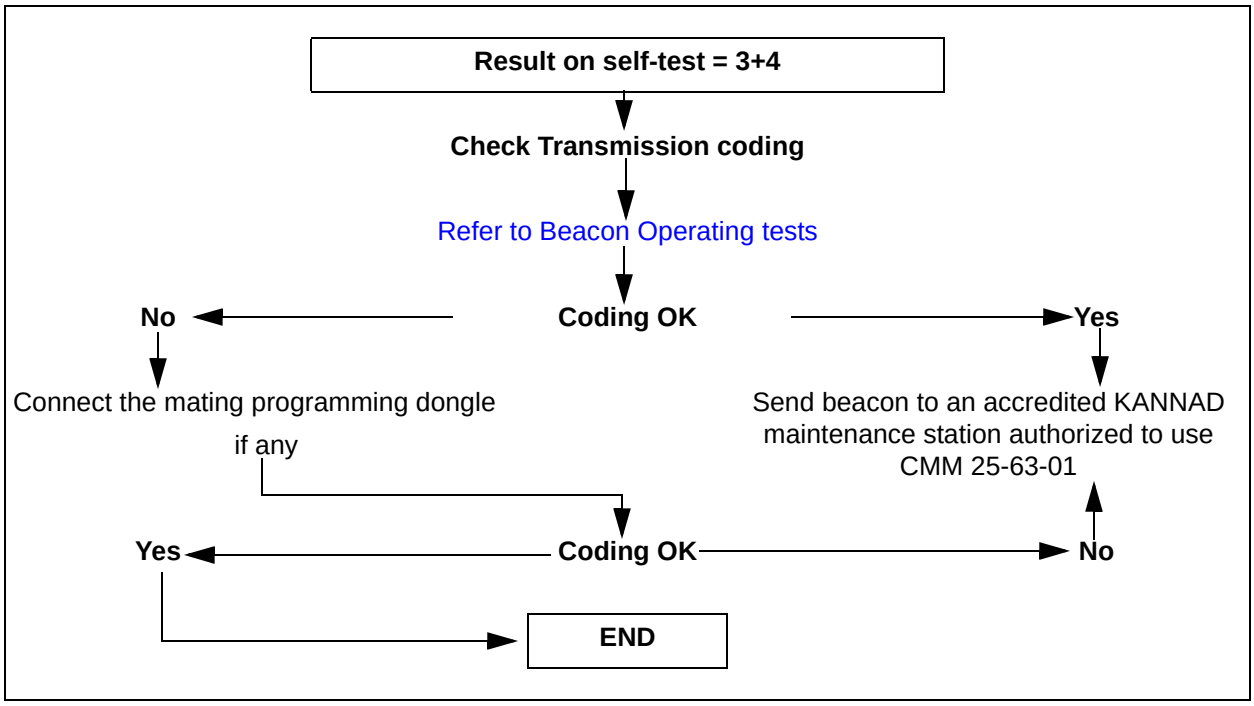
Table 1005 / 25-63-05-992-105 : Self-test Result 3+4

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# DISASSEMBLY

TASK 25-63-05-000-801-A01

## 1. General

A. Introduction

(1) This section gives the procedures for the disassembly of the equipment. The components are identified by their “Figure - Item” number in the Illustrated Parts List (Refer to Figure 10001 / 25-63-05-991-010-A01): the first number in brackets is the reference of the Illustrated Parts List figure, the second number in brackets is the number used to find the item in the corresponding figure (example: 1-70 means Figure IPL10001 - Item number 70).

NOTE: For batteries replacement, only the lower cover shall be removed.

B. Precautions

CAUTION: BEFORE THE START OF WORK ON THE BEACON, MAKE SURE THAT THE FRONT PANEL SWITCH IS SET TO “OFF”.

IN CASE OF COVER DISASSEMBLY, REPLACE O-RING AND PERFORM THE BEACON TIGHTNESS PROCEDURE GIVEN IN THE PAGEBLOCK ASSEMBLY (REFER TO SUBTASK 25-63-05-430-003-A01).

C. Tools, Fixtures and Equipment

(1) Special Tools, Fixtures Equipment List

(a) Refer to PAGEBLOCK SPECIAL TOOLS, FIXTURES, EQUIPEMENT AND CONSUMABLES

D. Consumables

(1) Consumables List

(a) Refer to PAGEBLOCK SPECIAL TOOLS, FIXTURES, EQUIPEMENT AND CONSUMABLES

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TASK 25-63-05-000-802-A01

## 2. Disassembly

Refer to Figure 10001 / 25-63-05-991-010-A01

A. Procedure

NOTE: Refer to PAGEBLOCK DESCRIPTION AND OPERATION

SUBTASK 25-63-05-020-001-A01

(1) Removal of the Auxiliary Antenna (1-70) (*)

NOTE: (*) For variants A, B, G, H, J, P and Q only, Refer to Table 1 / 25-63-05-992-011-A01.

(a) Cut the nylon thread (1-50) at the two loops.

(b) Remove the auxiliary antenna (1-70).

SUBTASK 25-63-05-020-002-A01

(2) Removal of the Lanyard (1-20) (*)

NOTE: (*) For variants A, B, G, H, J, P and Q only, Refer to Table 1 / 25-63-05-992-011-A01.

(a) Open the square knot and keep the lanyard (1-20) with the snap hook (1-30).

(b) Open the square knot and remove the snap hook (1-30).

SUBTASK 25-63-05-020-003-A01

(3) Removal of Water Switch Sensor (1-75) (**)

NOTE: (**) For variant P only (G, H and J, option), Refer to Table 1 / 25-63-05-992-011-A01.

(a) Disconnect the Water Switch Sensor (1-75) from the DIN-12 receptacle.

(b) Remove the Water Switch Sensor from the Water Switch hole.

SUBTASK 25-63-05-020-004-A01

(4) Removal of the Floating Collar (1-80) (**)

NOTE: (**) For variants G, H, J and P only, Refer to Table 1 / 25-63-05-992-011-A01.

(a) Push the floating collar (1-80) carefully up to remove it from the housing (1-190) of the beacon.

SUBTASK 25-63-05-020-005-A01

(5) Removal of Battery BT1 (1-130)

Refer to Figure 3001 / 25-63-05-991-301-A01

(a) Remove the eight screws (1-100) that hold the lower cover (1-90).

(b) Remove the lower cover (1-90).

(c) Remove the O-ring (1-180) from the lower cover (1-90) and discard it.

(d) Take the battery (1-130) out of its housing (1-190).

(e) Disconnect the battery (1-130), then remove it.

(f) Remove the foam wedges (1-150 and 1-160) and discard them.

(g) Take out the desiccant capsule (1-140) and discard it.

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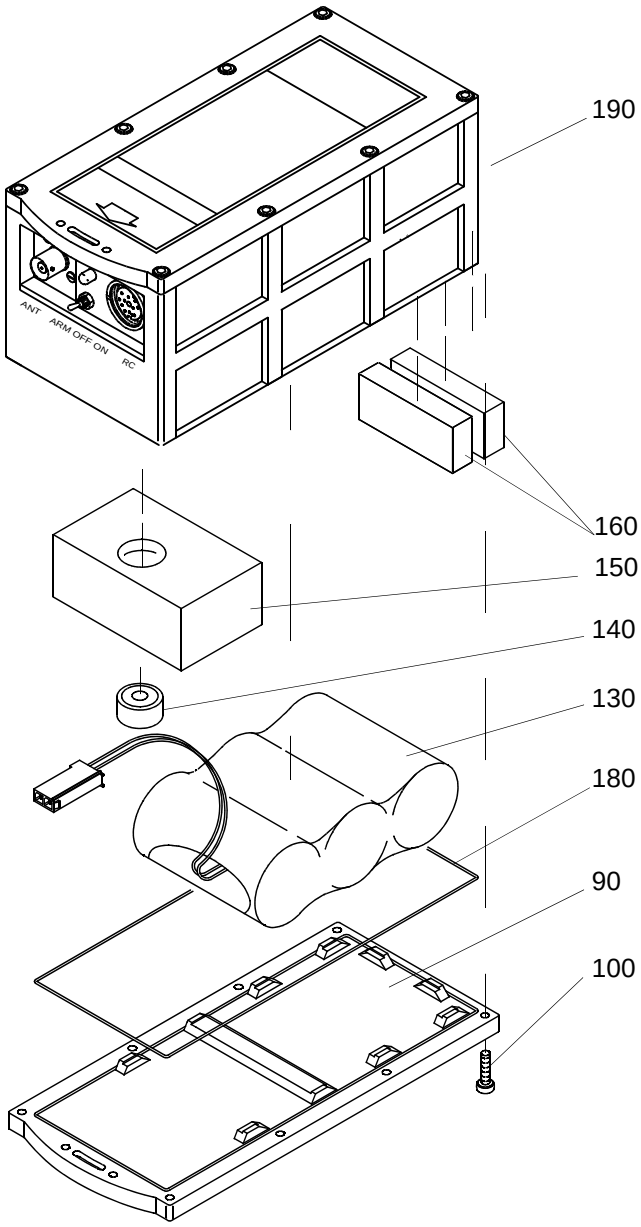
Figure 3001 / 25-63-05-991-301-1
REMOVAL OF BATTERY

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# ASSEMBLY

TASK 25-63-05-400-801-A01

## 1. General

A. Introduction

(1) This section gives the procedures for the assembly of the equipment. The components are identified by their “Figure - Item” number in the Illustrated Parts List (Refer to Figure 10001 / 25-63-05-991-010-A01).

(2) Assemble the unit in a clean, dust-free area in accordance with the procedure that follows. Use good standard workshop practices.

(3) Examine the parts ( PAGEBLOCK Check NOT APPLICABLE) before you start the assembly.

B. Special Instruction

CAUTION: BEFORE WORK ON THE BEACON, MAKE SURE THAT THE FRONT PANEL SWITCH IS SET TO “OFF”.

C. Tools, Fixtures and Equipment

(1) Special Tools, Fixtures Equipment List

(a) PAGEBLOCK SPECIAL TOOLS, FIXTURES, EQUIPEMENT AND CONSUMABLES

D. Consumable

(1) Consumable List

(a) PAGEBLOCK SPECIAL TOOLS, FIXTURES, EQUIPEMENT AND CONSUMABLES

E. Installation of Bracket

(1) For the Mounting Brackets: Refer to ACMM ATA No 25-63-11 and No 25-63-12.

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TASK 25-63-05-400-802-A01

## 2. Assembly

Refer to Figure 10001 / 25-63-05-991-010-A01

A. Procedure

SUBTASK 25-63-05-430-001-A01

(1) Installation of Battery (1-130)

(a) Preparation and Installation of a Replacement Label (1-120) for the Housing Assembly (1-190) (Refer to Figure 7001 / 25-63-05-991-701-A01).

NOTE: The battery kit (1-110) is supplied with a new identification label (1-120). After each replacement of the battery (1-130), it is necessary to write all information relating to the replaced battery (PN and expiry date) on this identification label (1-120).

1 Write the following data on a new Identification Label (1-120), in black ink or with a label printer:

a Fill the field «Battery Type» with the P/N of the new battery,

b Fill the field «Battery Expiry Date» with the «Expiry» information of the new battery,

c Fill the field «Inspection Date» with today's date.

d Fill the field «Next Control» with the date of next mandatory control according to the regulation in effect.

2 Copy the programming information of the old label.

3 Remove the old label from the housing assembly (1-190).

4 Rub with a lintless cloth soaked in solvents to remove all signs of bonding compound.

5 Remove the protection from the bottom of the new label (1-120).

6 Stick the new label (1-120) in the middle of beacon’s rear panel.

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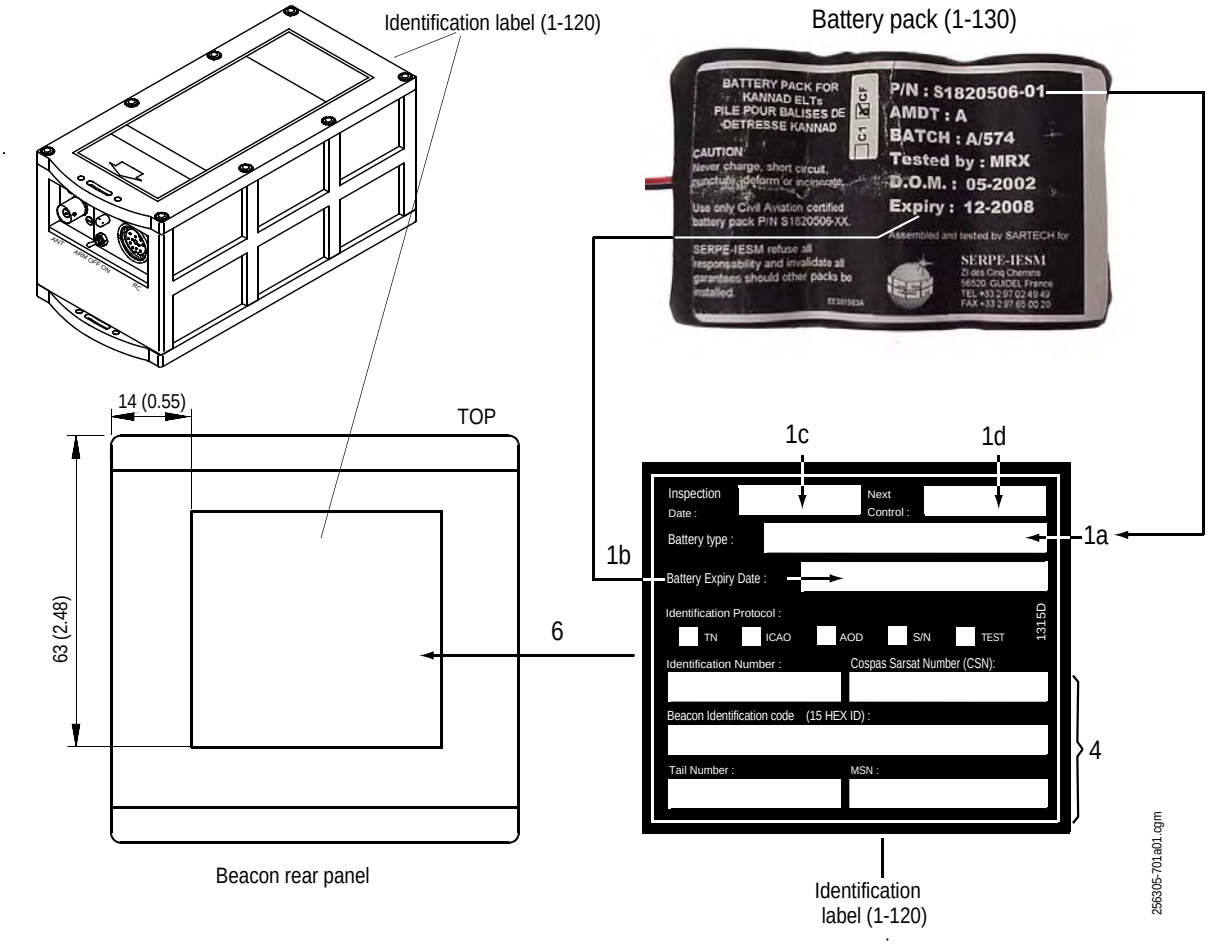
Figure 7001 / 25-63-05-991-701-1
REPLACEMENT OF IDENTIFICATION LABEL




(b) Check of current

Perform a current measurement in transmission and stand by mode (Refer to Current measurement after battery replacement, TASK 25-63-05-700-801-A01).

(c) Installation of Battery Compartment Components (Refer to Figure 3001 / 25-63-05-991-301-A01).

1 variants A, B, C, D, E, F, K, L, M, N and Q: install the small foam wedges (1-160) in the housing assembly (1-190).
variants G, H, J and P: install only one small foam wedge (1-160) in the housing assembly (1-190).

2 Put the battery (1-130) in its compartment (with the label* on the outer side).

NOTE: * this label, stuck on the battery, is different from the label concerning the Battery Kit (1-120) and has not to be recorded, removed or replaced.

3 Connect the battery (1-130).

4 Install the connectors in the bottom of the compartment.

5 Install the large foam wedge (1-150) in the housing assembly (1-190).

6 Install the desiccant capsule (1-140) in the large foam wedge, with the cardboard side on the outer side.

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(d) Check of battery

NOTE: The battery must be checked before closing the battery compartment

1 Carry out a self-test (Refer to TASK 25-63-05-700-801-A01)

NOTE: **as explained** TASK 25-63-05-400-801-A01**, a self test must only be performed with an antenna or a 50 ohms load connected to the antenna receptacle.**

SUBTASK 25-63-05-430-002-A01

(2) Installation of Lower Cover (1-90).

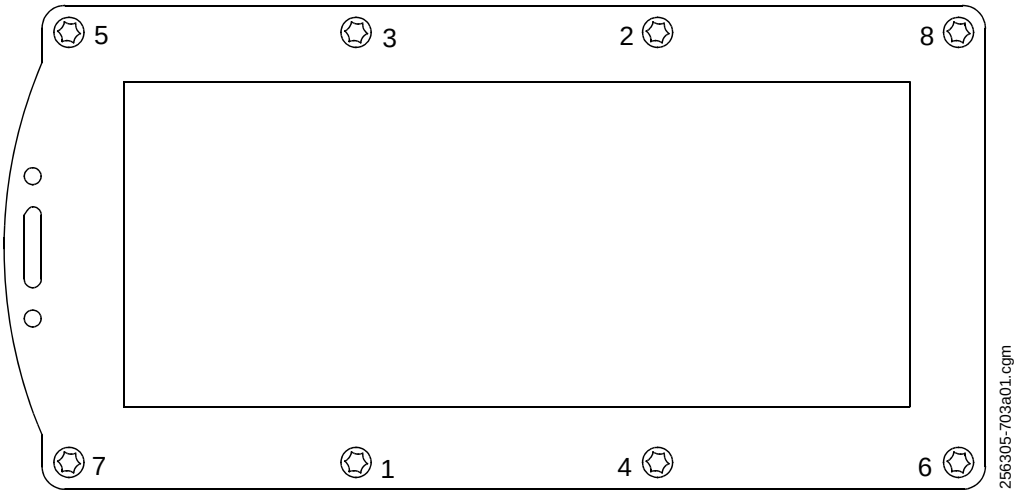
CAUTION: BEFORE TIGHTENING A SCREW, TURN IT COUNTER-CLOCKWISE TO FIND THE START OF THE HOUSING THREAD (AUDIBLE CLICK)

(a) Put a new O-ring (1-180) in the lower cover (1-90).

(b) Install the lower cover (1-90) in the correct assembly direction (the ear of the lower cover points to the front of the beacon) and install the eight screws (1-100).

(c) Tighten the eight screws (1-100) in the sequence shown (Refer to Figure 7002 / 25-63-05-991-702-A01), to a torque of 0.9 +0, -0.1 Newton x meter.

Figure 7002 / 25-63-05-991-702-1
COVER SCREW TIGHTENING




SUBTASK 25-63-05-430-003-A01

(3) Check of Beacon Tightness

(a) Soak the beacon vertically in a tank that contains sufficient water at 60 degrees Celsius +/ -5 degrees Celsius to cover the beacon.

(b) Make sure that, after 5 minutes, no string of air bubbles is released from:

- The bearing surfaces of the seals,
- The side that has the connectors, the switch and the LED,
- The attaching points (screws).
- Take the beacon out of the water and dry it.

NOTE: Some air bubbles can escape, in particular those caught in the hollow areas of the shaped edge.

If there is a leak, remove the beacon from the water rapidly and open it to remove all signs of moisture, then find the cause of the leak and correct as necessary.

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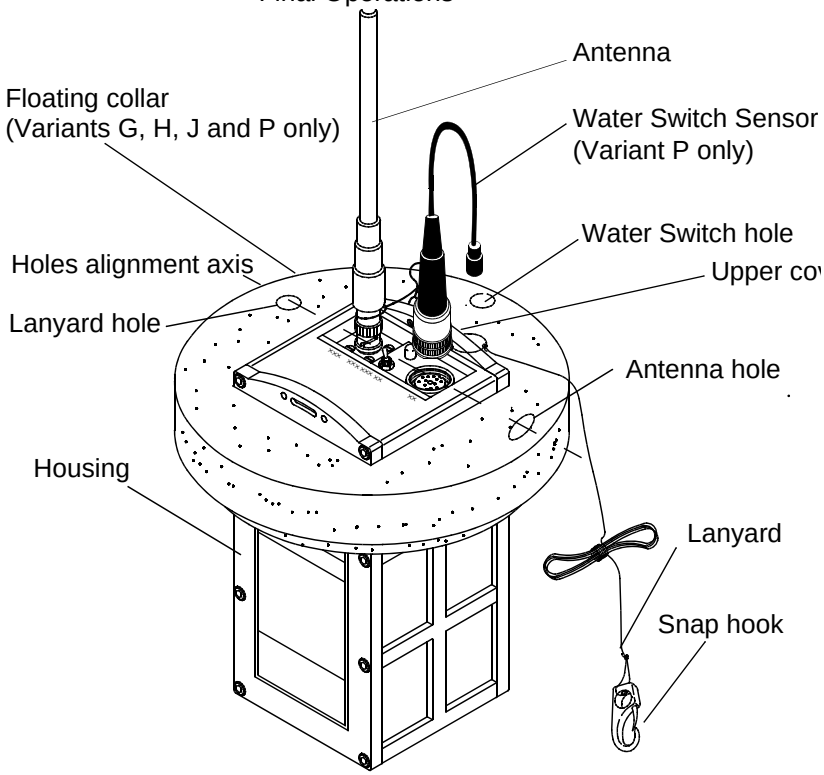
SUBTASK 25-63-05-430-004-A01

(4) Final Operations

(a) To install floating collar, lanyard and auxiliary antenna Refer to Figure 7003 / 25-63-05-991-703-A01, for the parts Refer to Figure 10001 / 25-63-05-991-010-A01

Figure 7003 / 25-63-05-991-703-1
Final Operations




(b) Installation of the Floating Collar (1-80) (*).

NOTE: (*) For variants G, H, J and P only, Refer to Table 1 / 25-63-05-992-011-A01.

1 Position the floating collar (1-80) on the top of the beacon so that the lanyard and antenna holes are aligned with the front panel connectors.

2 Push the floating collar (1-80) down until it locks into the upper cavities of the housing.

(c) Installation of the Lanyard (1-20) (**).

NOTE: (**) For variants A, B, G, H, J, P and Q only, Refer to Table 1 / 25-63-05-992-011-A01.

1 Put the lanyard through the snap hook (1-30) and make a square knot.

2 Stow the lanyard (1-20) and attach it with an elastic band.

3 Put the other end of the lanyard (1-20) in the right hole of upper cover (1-90) (opposite the antenna connector) and attach it with a square knot.

4 Install the part of lanyard stowed with the elastic band in the hole of the floating collar on the antenna receptacle side.

NOTE: to install the lanyard in the hole of the floating collar, it is recommended to attach it with a thread, pass this thread through the hole, pull the thread until to lanyard complete installation then remove the thread.

(d) Installation of the Water Switch Sensor (1-75) (**).

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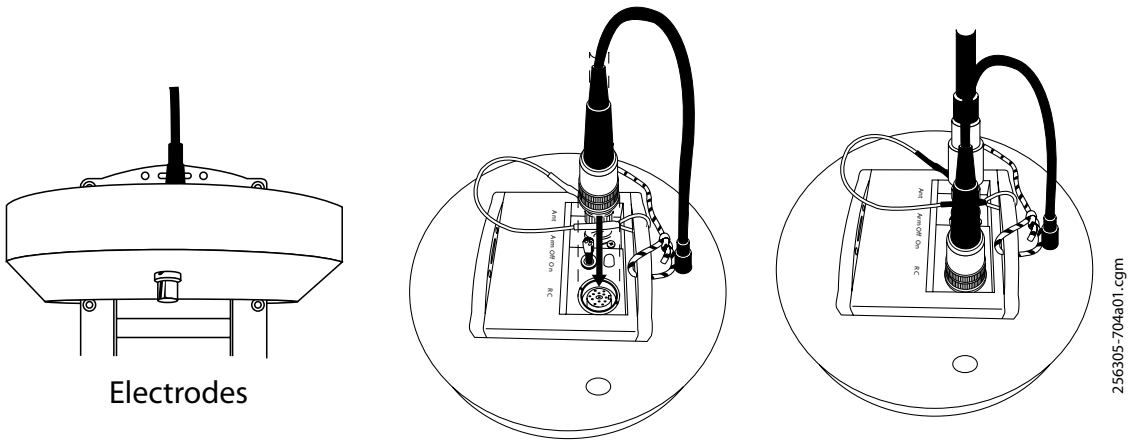
NOTE: (**) For variant P only, Refer to Table 1 / 25-63-05-992-011-A01.

1 Pass the electrodes of the water switch sensor through the water switch hole (Refer to Figure 7003 / 25-63-05-991-703-A01) so that they are almost level with the lower part of the floating collar (Refer to Figure 7004 / 25-63-05-991-704-A01).

2 Connect the DIN-12 connector of the water switch sensor to the DIN-12 receptacle of the front panel (Refer to Figure 7004 / 25-63-05-991-704-A01).

Figure 7004 / 25-63-05-991-704-1
Water Switch Sensor Installation




(e) Installation of the Auxiliary Antenna (1-70) (**).

NOTE: (**) For variants A, B, G, H, J, P and Q only, Refer to Table 1 / 25-63-05-992-011-A01.

1 Make a loop of nylon thread (1-50) around the base of the auxiliary antenna (1-70) (above the knurled ring), put a metal ring (1-40) on the line (with the end lightly further than the end of the ring) and tighten with flat pliers.

2 Put a heat shrink sleeve (1-60) 20 mm (0.78 in) in length on the ring (1-40) and shrink it.

3 At the other end, put a heat shrink sleeve (1-60) 20 mm (0.78 in) in length and a metal ring (1-40) on the line.

4 Put the line through the left hole of the upper cover (1-90) (antenna connector side), make a loop and install a metal ring (1-40) in the line (with the end lightly further than the end of the ring) and crimp with flat pliers.

5 Shrink the shrink sleeve (1-60).

6 On the ELT variants G, H, J and P only (Refer to Table 1 / 25-63-05-992-011-A01), connect the auxiliary antenna to the “ANT” receptacle, then bend it and break off the end in the hole of the floating collar on the 12-pin connector side.

(f) If necessary, install the protective cap (1-10) on the front panel connector.

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# SPECIAL TOOLS, FIXTURES, EQUIPEMENT AND CONSUMABLES

TASK 25-63-05-940-801-A01

## 1. General

A. Scope

(1) This pageblock gives the tools, fixtures, equipment and consumable that are necessary for operations on the equipment (with their recommended suppliers).

TASK 25-63-05-940-802-A01

## 2. Tools, Fixtures and Equipment

A. Special Tools, Fixtures and Equipment.

(1) The special tools, fixtures and test equipment are given in the Testing and Fault Isolation Section (Refer to PAGEBLOCK TESTING AND FAULT ISOLATION).

NOTE: You can use alternative equipment from other suppliers if they have equivalent properties.

B. Standard Tools, Fixtures and Equipment.

(1) The standard tools, fixtures and test equipment are given in the Testing and Fault Isolation Section (Refer to PAGEBLOCK TESTING AND FAULT ISOLATION and Refer to Table 9001 / 25-63-05-992-901-A01).

NOTE: You can use alternative equipment from other suppliers if they have equivalent properties.

Table 9001 / 25-63-05-992-901 : Standard Tools

| DESIGNATION | Characteristics | USE | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 3 | 4 | 5 | 6 | 7 |
| Digital voltmeter | COMMERCIALLY AVAILABLE | X | | | | | |
| Digital ammeter | COMMERCIALLY AVAILABLE | X | | | | | |
| Power supply source 9 VDC 3A | COMMERCIALLY AVAILABLE | X | | | | | |
| COSPAS SARSAT decoder | BT100AVTRIPLE, KANNAD P/N 0140956 or AEROFLEX IFR 4000 option 1 or equivalent(2) | X | | | | | |
| Load 50 Ohm BNC 1 Watt | COMMERCIALLY AVAILABLE | X | | | | | |
| Load 50 Ohm TNC 1 Watt | COMMERCIALLY AVAILABLE | X | | | | | |
| Dynamometric (torque) screwdriver | FACOM A.312 or equivalent | | X | | | | X |
| TORX® bit 10 | COMMERCIALLY AVAILABLE | | X | | | | X |

NOTE: (1) The meanings of the numbers in the USE column are as follow:

1: TESTING, 3: DISASSEMBLY, 4: CLEANING, 5: CHECK, 6: REPAIR, 7: ASSEMBLY.

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NOTE: (2) Cospas Sarsat tester equivalent properties

- Capable to measure power and frequencies of 121.5, 243 and 406.025 MHz (burst)
- Capable to decode a COSPAS-SARSAT digital message

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# ILLUSTRATED PARTS LIST

TASK 25-63-05-990-00-A01

## 1. Introduction

A. General

(1) This ILLUSTRATED PARTS LIST (IPL) is prepared to ATA Specification 100. It is divided as follows:

- INTRO: Introduction
- OPL: Optional Parts List
- VCL: Vendor Code List
- EDI: Equipment Designator Index
- NI: Numerical Index (in alphanumeric order)
- Detailed Parts List.

B. Function and Use

(1) The IPL contains a list of all the components used in the equipment. Its function is to help the procurement of parts and sub assemblies. The parts given in the IPL must be procured by the Part Numbers and from the manufacturers given in the Parts List. If not, the warranty can be cancelled.

(2) It is possible to identify parts as follows:

(a) From the Manufacturer's Part Number

1 Find the related Part Number in the Numerical Index (alpha and num). The columns to the right give the figure and item number of the part in the Detailed Parts List.

(b) From the Equipment Designator (for electronic components)

1 Find the equipment designator of the component on the Electrical Diagram. Then refer to the EDI to find:

- The figure and item number of the component in the Detailed Parts List.
- In some cases, there is an individual EDI for each PCB. In this case, the EDI has a GEO LOC column which shows the geographical location of the component on the figure (in relation to terminal 1 of the component).

(c) If the Part Number or Equipment Designator of the Part are not known

1 Look for the figure which shows the part and its item number. Then refer to the Detailed Parts List to find its Part Number.

C. How to use the Detailed Parts List

(1) The Detailed Parts List contains one or more figures which show the main assemblies of the equipment. Details of the parts are given on the opposite and subsequent pages.

(2) The list is divided into these columns:

- 1st column: Figure Item - Figure and Item number
- 2nd column: Part Number - Manufacturer's Part Number
- 3rd column: Airline Stock Number
- 4th column: Nomenclature
- 5th column: Effectivity Code
- 6th column: Units per assy - Quantity for the next higher assembly.

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(3) Details of the columns:

(a) Figure and Item Number

1 The figure number is given on the first line at the top of each page. Each item in the parts list which has a part number also has an item number. If there is a dash in front of an item number, the item is not shown on the figure. A letter before the item number refers to the figure which shows a variant of the related part. A letter after the item number identifies a variant of the part.

(b) Part Number

1 Each assembly, sub assembly and detail part has a manufacturer's Part Number (if it is shown on the figures or not). If the Part Number has more than 15 characters, the data in this column is given for identification only. The full manufacturer's Part Number is given in the NOMENCLATURE column, after the indication «ORDER OVERLGTH MPN...». It is followed by the FSCM (Federal Supply Code for Manufacturer).

(c) Airline Stock Number

1 This column is for airline use.

(d) Nomenclature

1 The NOMENCLATURE column gives the names of the assemblies and parts. The indication «ATTACHING PARTS» shows the parts which attach an assembly or part. These attaching parts are given directly below the assembly or part they attach. The next line has three asterisks, the first of which is directly below the item which is attached.

2 A Vendor Code is given for all the items which do not have a prime manufacturer's Part Number. This Vendor Code is given at the right of the NOMENCLATURE column. The addresses and codes of Vendors are given in the VENDOR CODE LIST.

3 If a part can come from a range of possible parts, the indication «SEL FROM» is given below the part. The indication «ESDS» is given in the NOMENCLATURE column for electronic components which are sensitive to electrostatic discharges.

(e) Effectivity Code

1 The Effectivity Code is a letter which shows the interchangeability of the parts on a figure, as shown below:

| FIGURE ITEM | PART NUMBER | AIRLINE STOCK NO. | NOMENCLATURE | EFF. CODE | UN PER ASSY |
|---|---|---|---|---|---|
| 1- 1A | B490AAM0101 | | UNIT | | RF |
| - 1B | B490AAM0202 | | UNIT | | RF |
| - 1C | B490AAM0303 | | UNIT | | RF |
| - 1D | B490AAM0404 | | UNIT | | RF |
| 10A | F1234560 | | .DETAIL PART | 1A | 1 |
| 10B | F1234561 | | .DETAIL PART | 1ABC | 1 |
| 10C | F1234562 | | .DETAIL PART | 1D | 1 |
| 20A | F2345670 | | .SUBASSY | 1A | 1 |

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| FIGURE ITEM | PART NUMBER | AIRLINE STOCK NO. | NOMENCLATURE | EFF. CODE | UN PER ASSY |
|---|---|---|---|---|---|
| 20B | F2345671 | | .SUBASSY | 1ABC | 1 |
| 20C | F2345672 | | .SUBASSY | | 1 |
| 20D | F2345673 | | .SUBASSY | | 1 |
| | | | ATTACHING PARTS | | |
| 30A | F3456780 | | .DETAIL PART | | 1 |
| | | | *** | | |
| 40A | F4567890 | | ..DETAIL PART OF SUBASSY | 20A | 1 |
| 40B | F4567891 | | ..DETAIL PART OF SUBASSY | 20AB | 1 |
| 40C | F4567892 | | ..DETAIL PART OF SUBASSY | 20ABC | 1 |
| 40D | F4567893 | | ..DETAIL PART OF SUBASSY | 20D | 1 |

- The detail part with item number 10A can only be installed in the unit with item number 1A.
- The detail part with item number 10B can be installed in units 1A, 1B and 1C.
- The detail part with item number 10C can only be installed in unit 1D.
- The sub assembly with item number 20A can only be installed in unit 1A.
- The sub assembly with item number 20B can be installed in units 1A, 1B and 1C.
- The sub assemblies with item numbers 20C and 20D and their attaching parts 30A can be installed in all the units with item number 1. Thus, they do not have an effectivity code.
- The detail part with item number 40A can only be installed in the sub assembly with item number 20A.
- The detail part with item number 40B can be installed in sub assemblies 20A, and 20B.
- The detail part with item number 40C can be installed in sub assemblies 20A, 20B and 20C.
- The detail part with item number 40D can only be installed in sub assembly 20D.

(f) Units per Assy

1 The UNITS PER ASSY column shows the number of parts necessary for the next higher assembly. For some assemblies or parts, the number is replaced by the letters RF (for Reference) and AR (As Required).

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D. Abbreviations used in the Detailed Parts List

(1) List of abbreviations

AR : As Required

AMDMNT : Amendment

DET : Detail

EFF : Effectivity

ESDS : Electrostatic Discharge Sensitive

NHA : Next Higher Assembly

NP : Not Procurable

OPT : Optional

ORDER OVERLGTH MPN : Order Overlength Manufacturer's Part Number

POST SB : Post Service Bulletin

PRE SB : Pre Service Bulletin

R : Revised

RF : For Reference

SEL FROM : Select From

SUPSD BY : Superseded By

SUPSDS : Supersedes

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## VENDOR CODE LIST

(TASK 25-63-05-980-801-A01)

| CODE | VENDOR'S ADDRESS |
|---|---|
| VFAU27 | KANNAD<br>ZI DES CINQ CHEMINS- BP 23<br>56520 GUIDEL<br>FRANCE |
| VF9213 | EJOT FRANCE SARL<br>ZI - BP 23<br>RUE DU CLIMONT<br>67220 NEUVE EGLISE<br>FRANCE |

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## EQUIPMENT DESIGNATOR INDEX

(TASK 25-63-05-960-801-A01)

| EQUIPMT DESIG | GEO LOC | FIGURE ITEM |
|---|---|---|
| | | |

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## NUMERICAL INDEX

(TASK 25-63-05-970-801-A01)

| PART NUMBER | AIRLINE STOCK NO. | FIGURE ITEM | | TLA REQ |
|---|---|---|---|---|
| 0120841 | | 1 | 40A | 2 |
| 0120853 | | 1 | 30A | 1 |
| 0120904 | | 1 | 60A | 2 |
| 0122993 | | 1 | 120A | 1 |
| 0122996 | | 1 | 210A | 1 |
| 0122997 | | 1 | 210B | 1 |
| 0123001 | | 1 | 200A | 1 |
| 0123002 | | 1 | 200B | 1 |
| 0123004 | | 1 | 200C | 1 |
| 0123006 | | 1 | 200D | 1 |
| 0123007 | | 1 | 290B | 1 |
| 0123008 | | 1 | 200E | 1 |
| 0123010 | | 1 | 210A | 1 |
| 0123175 | | 1 | 240A | 1 |
| 0123272 | | 1 | 200F | 1 |
| 0123320 | | 1 | 230A | 4 |
| 0123390 | | 1 | 200G | 1 |
| 0123831 | | 1 | 140A | 1 |
| 0124012 | | 1 | 50A | AR |
| 0124014 | | 1 | 20A | AR |
| 0124115 | | 1 | 180A | 1 |
| 0124194 | | 1 | 70B | 1 |
| 0124206 | | 1 | 70A | 1 |
| 0126374 | | 1 | 161A | 1 |
| 0126375 | | 1 | 162A | 1 |
| 0126601 | | 1 | 163A | 1 |
| 0126602 | | 1 | 164A | 1 |
| 0131641 | | 1 | 80A | 1 |

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| PART NUMBER | AIRLINE STOCK NO. | FIGURE ITEM | TLA REQ |
|---|---|---|---|
| 0131948 | | 1 90A | 2 |
| 0132014 | | 1 160A | 2 |
| 0132015 | | 1 150A | 1 |
| 0132027 | | 1 170A | 1 |
| 0132205 | | 1 85A | 1 |
| 0133859 | | 1 10A | 1 |
| 0137375 | | 1 100A | 16 |
| 0141393 | | 1 210C | 1 |
| 0141394 | | 1 200H | 1 |
| 0146375 | | 1 50B | AR |
| S1820502-01 | | 1 - 1A | RF |
| S1820502-02 | | 1 - 1B | RF |
| S1820502-04 | | 1 - 1Q | RF |
| S1820506-01 | | 1 130A | 1 |
| S1820506-02 | | 1 160B | 1 |
| S1820507-01 | | 1 190A | 1 |
| S1820507-02 | | 1 190B | 1 |
| S1820507-03 | | 1 190C | 1 |
| S1820514-13 | | 1 75A | 1 |
| S1820516-99 | | 1 - 110A | 1 |
| S1821502-01 | | 1 - 1C | RF |
| S1821502-02 | | 1 - 1D | RF |
| S1821502-06 | | 1 - 1N | RF |
| S1822502-01 | | 1 - 1E | RF |
| S1822502-02 | | 1 - 1F | RF |
| S1823502-01 | | 1 - 1G | RF |
| S1823502-02 | | 1 - 1H | RF |
| S1823502-03 | | 1 - 1J | RF |
| S1823502-05 | | 1 - 1P | RF |
| S1824502-01 | | 1 - 1K | RF |

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| PART NUMBER | AIRLINE STOCK NO. | FIGURE ITEM | TLA REQ |
|---|---|---|---|
| S1824502-02 | | 1 - 1L | RF |
| S1826502-02 | | 1 - 1M | RF |

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# ELT,KANNAD 406

(25-63-05-950-010-A01)

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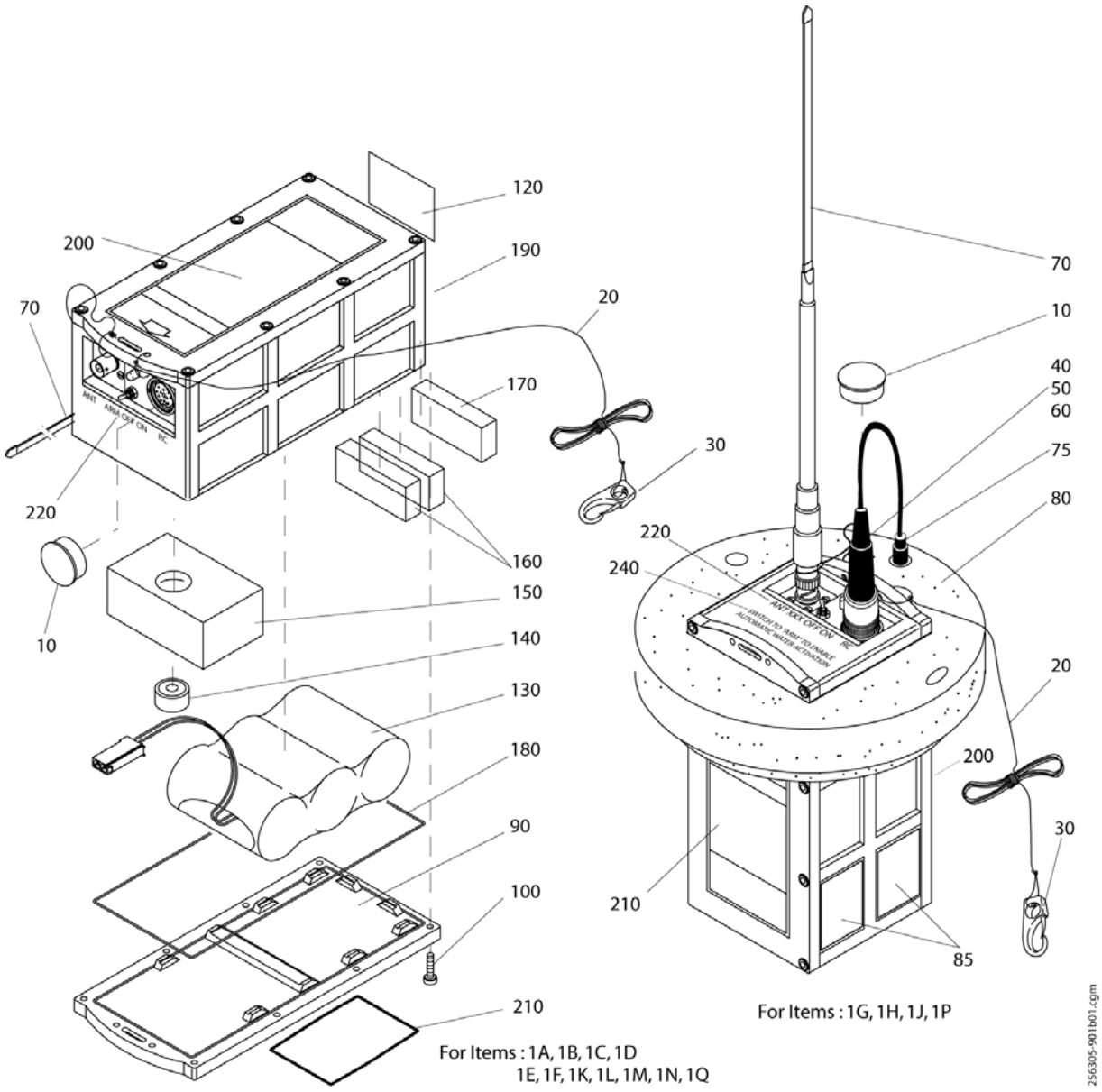
Figure 10001 / 25-63-05-991-010-01
ELT,KANNAD 406



**PARTS LIST**

(TASK 25-63-05-970-801-A01)

| FIGURE 10001 ITEM | PART NUMBER | AIRLINE STOCK NO. | NOMENCLATURE<br>1234567 | EFF. CODE | UN. PER ASS |
|---|---|---|---|---|---|
| -1A | S1820502-01 | | ELT,KANNAD 406AP | | RF |
| - 1B | S1820502-02 | | ELT,KANNAD 406AP | | RF |
| - 1C | S1821502-01 | | ELT,KANNAD 406AF | | RF |
| - 1D | S1821502-02 | | ELT,KANNAD 406AF | | RF |
| - 1E | S1822502-01 | | ELT,KANNAD 406AF-H | | RF |
| - 1F | S1822502-02 | | ELT,KANNAD 406AF-H | | RF |
| - 1G | S1823502-01 | | ELT,KANNAD 406AS | | RF |
| - 1H | S1823502-02 | | ELT,KANNAD 406AS | | RF |
| - 1J | S1823502-03 | | ELT,KANNAD 406AS-TNC | | RF |
| - 1K | S1824502-01 | | ELT,KANNAD 121AF | | RF |
| - 1L | S1824502-02 | | ELT,KANNAD 121AF | | RF |
| - 1M | S1826502-02 | | ELT,KANNAD 121AF-H | | RF |
| - 1N | S1821502-06 | | ELT,KANNAD 406AF (6D) | | RF |
| - 1P | S1823502-05 | | ELT,KANNAD SURVIVAL | | RF |
| - 1Q | S1820502-04 | | ELT,KANNAD 406 AP-H | | RF |
| | | | STORAGE PARTS | | |
| 10A | 0133859 | | .CAP,PROTECTIVE<br>*** | | 1 |
| 20A | 0124014 | | .LANYARD<br>DIA 2MM L 3M | 1ABG HJPQ | AR |
| 30A | 0120853 | | .HOOK,SNAP BLACK NYLON | 1ABG HJPQ | 1 |
| 40A | 0120841 | | .SLEEVE,METALLIC INT<br>DIA 2.2 | 1ABG HJPQ | 2 |
| 50A | 0124012 | | .THREAD,NYLON<br>DIA 1X25<br>SUPSD BY ITEM 50B | 1ABG HJPQ | AR |
| 50B | 0146375 | | .THREAD,NYLON<br>DIA 1X25<br>SUPSD ITEM 50A | 1ABG HJPQ | AR |
| 60A | 0120904 | | .SHEATH,HEAT SHRINKABLE | 1ABG HJPQ | 2 |
| 70A | 0124206 | | .ANTENNA,WHIP ANT 100<br>(BNC) | 1ABG HQ | 1 |
| 70B | 0124194 | | .ANTENNA,WHIP ANT 110<br>(TNC) | 1JP | 1 |
| 75A | S1820514-13 | | .WATER SWITCH SENSOR | 1P | 1 |
| 80A | 0131641 | | .FLOATING COLLAR | 1GHJP | 1 |
| 85A | 0132205 | | .BALLAST, WATER SWITCH | 1P | 4 |
| 90A | 0131948 | | .COVER | | 2 |
| | | | ATTACHING PARTS | | |

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(TASK 25-63-05-970-801-A01)

| FIGURE 10001 ITEM | PART NUMBER | AIRLINE STOCK NO. | NOMENCLATURE 1234567 | EFF. CODE | UN. PER ASS |
|---|---|---|---|---|---|
| 100A | N1452K30X14A2 | | .SCREW,TAPPING THREAD FORMING VF9213<br>(0137375)<br>*** | | 16 |
| -110A | S1820516-99 | | .KIT, BAT300 | | 1 |
| 120A | 0122993 | | ..LABEL,IDENTIFICATION KANNAD 121-406 | | 1 |
| 130A | S1820506-01 | | ..BATTERY, BAT300 NP | | 1 |
| 130B | S1820506-02 | | ..BATTERY, BAT300 NP | | 1 |
| 140A | 0123831 | | ..CAPSULE,DESICCANT | | 1 |
| 150A | 0132015 | | ..WEDGE,FOAM LARGE | | 1 |
| 160A | 0132014 | | ..WEDGE,FOAM SMALL | | 2 |
| 161A | 0126374 | | ..PLUG, 2PTS MALE AMP 172165-1 FOR BTY CURRENT MEASUREMENT | | 1 |
| 162A | 0126375 | | ..PLUG, 2PTS FEMALE AMP 172233-1 FOR BTY CURRENT MEASUREMENT | | 1 |
| 163A | 0126601 | | ..CRIMP CONTACT, MALE AMP 170364-1 FOR BTY CURRENT MEASUREMENT | | 2 |
| 164A | 0126602 | | ..CRIMP CONTACT, FEMALE AMP 170366-1 FOR BTY CURRENT MEASUREMENT | | 2 |
| 170A | 0132027 | | .BALLAST | 1GHJP | 1 |
| 180A | 0124115 | | ..O-RING | | 1 |
| 190A | S1820507-01 | | .HOUSING,ASSY | 1ACEGK | 1 |
| 190B | S1820507-02 | | .HOUSING,ASSY | 1BDFHLMNQ | 1 |
| 190C | S1820507-03 | | .HOUSING,ASSY | 1JP | 1 |
| 200A | 0123001 | | .LABEL,INSTRUCTION (KANNAD 406AP) | 1ABQ | 1 |
| 200B | 0123002 | | .LABEL,INSTRUCTION (KANNAD 406AF, EES01328) | 1CD | 1 |
| 200C | '0123005 | | .LABEL,INSTRUCTION (KANNAD 406AF-H, EES01330) | 1EF | 1 |
| 200D | 0123006 | | .LABEL,INSTRUCTION (KANNAD 406AS, EES01331) | 1GHJ | 1 |
| 200E | 0123008 | | .LABEL,INSTRUCTION (KANNAD 121AF, EES01333) | 1KL | 1 |
| 200F | 0123272 | | .LABEL,INSTRUCTION (KANNAD 121AF-H, EES01364) | 1M | 1 |
| 200G | 0123390 | | .LABEL,INSTRUCTION (KANNAD 406AF (6D), EES01758) | 1N | 1 |

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**PARTS LIST**

(TASK 25-63-05-970-801-A01)

| FIGURE 10001 ITEM | PART NUMBER | AIRLINE STOCK NO. | NOMENCLATURE 1234567 | EFF. CODE | UN. PER ASS |
|---|---|---|---|---|---|
| 200H | 0141394 | | .LABEL,INSTRUCTION (KANNAD 406 SURVIVAL, EES01846) | 1P | 1 |
| 200J | 0143018 | | .LABEL,INSTRUCTION (KANNAD 406AP-H, EES01878) | 1Q | 1 |
| 210A | 0123010 | | .LABEL,INSTRUCTION (FRENCH KANNAD 406AP, EES01335) | 1ABQ | 1 |
| 210B | 0123007 | | .LABEL,INSTRUCTION (FRENCH KANNAD 406AS, EES01332) | 1GHJ | 1 |
| 210C | 0141393 | | .LABEL,INSTRUCTION (FRENCH KANNAD 406 SURVIVAL, EES01847) | 1P | 1 |
| 210D | 0143019 | | .LABEL,INSTRUCTION (FRENCH KANNAD 406AP-H, EES01879) | 1Q | 1 |
| 220A | 0122996 | | .LABEL,ARM (EES01318) | 1ABC DEFH JKLM NPQ | 1 |
| 220B | 0122997 | | .LABEL,TST (EES01319) | 1G | 1 |
| - 230A | 0123320 | | .LABEL,PRODUCTION STAMP (EES01685) | | 4 |
| 240A | 0123175 | | .LABEL,SWITCH TO ARM (EES01523) | 1P | 1 |

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# STORAGE (INCLUDING TRANSPORTATION)

TASK 25-63-05-550 -801-A01

## 1. Storage

A. General

(a) Ensure the switch is in OFF position.

(b) Put the beacon in its transport package, taking all necessary steps to protect it from any possible impact.

NOTE: - for variants G, H, J and P (Refer to Table 1 / 25-63-05-992-011-A01) beacon: first place the beacon in its transport bag (if supplied).

- for variant J and P, install the protective cap (1-10) on connector of front panel (Refer to Figure 10001 / 25-63-05-991-010-A01).

(c) Place the beacon follow-up log in the package.

(d) On the package, affix a label giving the following indications:

- manufacturer company name,
- equipment name,
- equipment part number,
- equipment serial number,
- date of next servicing,
- date of delivery.

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